

# MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

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## Will the South Win the Race

The output of the steel works and rolling mills of the United States will this year reach about \$2,500,000,000 as against \$916,000,000 in 1914. This unprecedented increase is, to some extent, typical of the growth that is taking place in other industries. The output of shipyards, for instance, will show an even greater percentage of gain than these amazing figures of steel works and rolling mills.

As one travels through New Jersey, New York, Pennsylvania and the Middle States, evidences of activity in the building of new industrial enterprises and the enlargement of existing plants are seen on every hand. More work of this kind is in evidence from railroad trains passing through these States than for many years; indeed, the impression is gained that this construction activity of industrial enterprises is greater than ever before in the history of the country. The people of these States are taking advantage of this opportunity to carry their work forward on a large scale. They are broadening their activities. They are expanding the output of their factories. They are busy building new factories and diversifying the character of their products. Shipyards, machine shops and enterprises covering almost the whole range of human activity are full of life and snap and energy.

Is the South keeping pace?

If not, what is the reason?

It has natural advantages far exceeding those of other sections. It has the raw materials out of which to create a wider variety and greater extent of industries than possessed by any other part of this country. It is doing much, but is it matching in the activity and variety of its industrial progress the conditions prevailing elsewhere?

Are the people of this section fully alive to the unequalled opportunity which the present situation offers to them? Are the bankers and the business men generally as eager to avail themselves of this opportunity to lift the whole industrial structure of the South to a higher plane as they should be?

Are the people of this section utilizing to its fullest the opportunity brought about by the amazing increase of prosperity and development of industries in the United States and the conditions in Europe which are opening the markets of the world to the output of our farms and factories?

Many Southern people and papers for years said, Give us free trade or a Democratic tariff and we will move the iron and steel works and other industries of the North and the West to the South. They have a Democratic free-trade tariff, but they are not moving things as much as they promised. What is the matter with them? The South is in control of Congress and the Administration. It has everything in its favor—everything its free traders have clamored for. Is it possible that its free-trade theorists have been blind leaders of the blind?

If the South is not doing the utmost in its power, if it is not running the race with all the energy at its command, if it is not putting behind it the things of the past and looking forward with eagerness to the prize before it, is it not time for its people of all classes and all professions to enter the race with a determination to win? Other sections are moving forward with an activity which is almost like a miracle. Will the South win the prize because it has greater inherent strength in natural advantages, or will it permit others to surpass it in achievements based not on natural resources, but on the fullest utilization of brain power?

It is time for the South to be studying the situation.

BALTIMORE, JUNE 1, 1916



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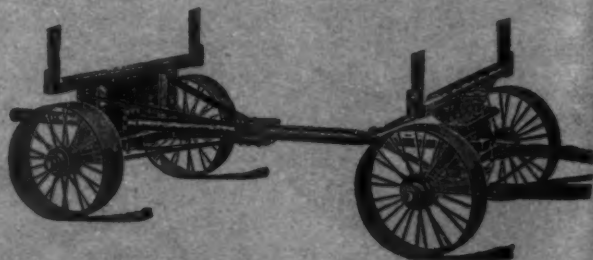
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## THE BETHLEHEM STEEL CO. BEGS THE REAL ARMOR-PLATE QUESTION.

THE Bethlehem Steel Company continues to issue its bulletins addressed "to the members of Congress" in opposition to the proposed armor-plate plant by the National Government. In the recent circulars issued by the company, signed by Chairman Schwab and President Grace, the following statement appears:

We offer to continue producing armor—

First, of a quality to be determined by the rigid requirements of the Navy Department; and,

Second, at a price to be fixed by the Federal Trade Commission.

The entire situation is thus left absolutely in the control of the Government.

Under such conditions, is there any occasion to waste \$11,000,000 in building a Government armor plant?

Mr. Schwab and Mr. Grace still fail to meet the issue that has been raised, or to answer the question that has been presented to them:

Under existing conditions every armor plate plant in the country is dependent upon ores which could be instantaneously cut off in time of war. If there is any justification whatsoever for making armor plate, or creating a navy or developing an army, there is equal reason why the navy and the army should not be absolutely dependent upon armor plate and munition industries located in a limited area and dependent upon ores the supply of which could be shut off at any moment, bringing about a complete collapse of armor-plate making, shipbuilding and munition production.

The Manufacturers Record therefore asks the Bethlehem Steel Co. the questions:

Is it fair to the national welfare that existing conditions in iron and steel and armor plate and munition making should continue?

Will the Bethlehem Steel Co. or the other armor-plate-making concerns go one step farther and say to the National Government if you will agree not to build an armor-plate plant, we will agree to build somewhere in the Central South or Southwest an armor-making plant not dependent upon Lake Superior or foreign ores?

Unless the Bethlehem Company is willing to make this offer, all its proposition as to price and

quality and the conditions for fixing the price of armor plate, are wholly without value.

There are many reasons why the Government should engage in the manufacture of armor plate and in munition-making, as well as in the building of battleships; but, entirely outside of these reasons, there is a supreme reason, vital to the nation, why existing conditions as to the location of iron and steel and munition and armor making plants should no longer be permitted to continue. It would be criminal folly on the part of Congress, if not on the part of iron and steel people of the country, not to recognize this situation and act accordingly.

Every argument that the Bethlehem Company puts out is calculated to mislead the country and make the people forget that the prime consideration is not a difference of a few dollars a ton in the cost of armor plate, but that it is where should armor-plate plants be located in order to save the country from the present unwise, uneconomic and dangerous condition.

## GERMAN DYESTUFF MANUFACTURERS PREPARING TO FIGHT FOR TRADE.

FROM United States Consul-General Harris, Frankfort-on-the-Main, there comes a report to the Government giving some interesting information as to combinations and agreements among the dyestuff manufacturers of Germany. According to this report, dyestuff makers, representing a capital of nearly \$60,000,000, have made new agreements which will enable them to meet conditions which may develop in the United States should this country put a tariff on dyestuffs. This agreement also, according to Mr. Harris, provides for setting up in foreign countries dye factories owned by this combination of German dye makers in order to maintain their trade in other countries. In this way this great combination of wealth could afford to establish dye factories and run them at a loss in order to kill off the dye industry in the United States or in other countries. These losses would be divided among the members of the combination, or this combination, with its vast capital and its great factories, could unite to flood every market with dyestuffs, regardless of the loss to them, and pro rate these losses, and in this way break down the development of the dye industry in this and other countries.

The situation as outlined by Consul Harris indicates all of these possibilities and is in line with what intelligent people in the United States have long foreseen would be the outcome of present conditions if we do not put an adequate tariff on the dyestuff industry.

The report from Consul-General Harris, published in "Commerce Reports," issued by the Department of Commerce, presents the following interesting facts:

For some years past two important groups have existed among the large dyestuff and chemical industries of Germany. Each of these groups contains three of the more important concerns which, although operating independently, have had an understanding among themselves as to various matters arising in the conduct of their business. The groups themselves had no common interest, and were active competitors. The profits accruing in one of the two groups were divided among the three concerns accord-

ing to a scale agreed upon. In the other group there was no pooling of profits.

For some time past negotiations have been pending for a further combination of the two groups and the adding of other concerns thereto. It is now reported that such combination has been accomplished. The reason for a further uniting of the industry is stated to have grown in part out of the war and the heavy losses due to an interruption of business in hostile countries, to the large outstanding accounts as well as to property interests in these countries, together with proposed legislation in several countries regarding trade. References have been made in newspapers of the proposed efforts in the United States and England to establish the dyestuff industry on a large scale and thus increase competition in these countries. Proposed legislation in the United States to increase the tariff on dyestuffs and to prevent the sale of dyestuffs in the country at a lower price than the same products are sold in Germany is also referred to. The movement now on foot among the factories is said to be merely a defensive one to meet the more difficult situation that has arisen and is likely to arise after the war. If it becomes necessary to manufacture in foreign countries, the industry acting as a whole can do this more easily than a single concern or a small group could do. The plan of working together in this manner by the greatest concerns of their kind in the world is referred to as likely to be of far-reaching industrial importance.

The plan as agreed upon leaves each concern an independent and competing one, with its own plant, laboratories, officers and workmen under its entire control. A trust or a combination with the ordinary trust features is not contemplated, and, it is claimed, would be opposed by all the concerns both as against their own interests and those of the industry as a whole. Arrangement is made, however, for a mutual exchange of information as to factory methods and other matters tending to reduce the cost of manufacture and otherwise strengthen the industry as a whole. The total profits are to be divided at the end of the year according to an agreed scale.

The concerns named as included in the new arrangement with the capital stock of each are as follows:

Badische Anilin-und-Sodafabrik, Ludwigshafen, capital stock 51,000,000 marks (\$12,852,000).

Farbenfabriken Friedrich Bayer & Co., Leverkusen, capital stock 51,000,000 marks (\$12,852,000).

Farbwerke von Meister, Lucius & Bruning, Höchst-am-Main, capital stock 54,000,000 marks (\$12,852,000).

Leopold Cassella & Co., Frankfort-on-Main, capital stock 20,000,000 marks (\$7,140,000).

Aktiengesellschaft für Anilin-Fabrikation, Berlin, capital stock 19,800,000 marks (\$4,712,400).

Chemische Fabriken vorm. Weller ter Meer, Uerdingen-am-Rhein, capital stock 8,000,000 marks (\$1,904,000).

Kalle & Co., Bielebrich-am-Rhein, capital stock 6,000,000 marks (\$1,428,000).

The dividends paid by the three first-named concerns in 1914 were 19, 19 and 20 per cent., respectively. It is expected that a dividend of 20 per cent. will be paid by each for the year 1915.

## OCTOBER MEETING OF AMERICAN IRON AND STEEL INSTITUTE.

ST. LOUIS, by vigorous and broadminded work, succeeded in capturing the October meeting of the American Iron and Steel Institute.

At the start a good many of the members were opposed to holding the meeting so far in the Southwest, but so vigorously was the situation presented before the directors that their opposition was overcome, the vote for St. Louis was unanimous and it was heartily approved by the members generally of the Institute. This St. Louis meeting will carry into that section many of the iron and steel people of the East who know very little personally about St. Louis or the Southwest. Many of them have never seen that city or that section unless it be in hurried trips, which gave them no opportunity to study what the Southwest has done and what it is destined to do in material advance.

The MANUFACTURERS RECORD congratulates St. Louis and the Southwest upon having captured the next meeting, and it congratulates the members of the American Iron and Steel Institute upon having accepted an invitation which will yield so much of pleasure and of profit.

## A NEW ENGLAND TRIBUTE TO THE SOUTH.

UNDER the heading "Characteristic America" the Boston Transcript criticises some of the statements recently made by President Wilson in his speech at Charlotte, N. C., with a vigor which shows that while he touched a tender spot as to New England's history, the Transcript was as ready to give unstinted praise to the South as to its own section.

As a historian President Wilson has held high rank, but the Transcript leaves but little ground for him to stand on in his Charlotte statement of the history of this country as he views it in relation to the South and to New England.

In discussing his address the Transcript praises the South, and says:

Washington, Jefferson, Madison, Monroe, Jackson, Harrison, Taylor, Henry, the whole immortal brood of the Lees, Marshall, Lincoln, Houston and the pioneers of the Southwest and California, must all have risen up to controvert him with the mere presence of their indignant shades. These Southern heroes would have carried with them a great share, indeed, of the initiative, the inspiration, the controlling suggestion of the political institutions that have made America. Their political genius was beyond anything else of that sort that we have had in America, and to this day their descendants have kept flowing purely the current of the blood on whose drops their public capacity was nourished.

Referring to Presidents elected from the Middle States, to none of whom the Transcript gives much praise, it mentions Roosevelt, and of him says:

And Roosevelt, by far the greatest of that company, mixed in blood, it is true, but deriving his political genius from a Southern mother as surely as he derived his fine stubbornness from his Dutch paternal ancestry.

The whole tribute of the Transcript to the mighty men of the South of former days is typical of the broadmindedness of that paper. In its editorial it says:

President Wilson challenged history as boldly, and doubtless as vainly, as he challenged Germany in his Lusitania dispatch, when, in a speech at Charlotte, N. C., recently, he said:

"America did not come out of the South, and it did not come out of New England. The characteristic part of America originated in the Middle States of New York and Pennsylvania and New Jersey, because there from the first was that mixture of populations, that mixture of racial stocks, that mixture of antecedents which is the most singular and distinguished mark of the United States."

America, as a matter of fact, has "come out of" itself, and all America is the breeding ground of the characteristic things. But if we seek out the natal spot of every single vital institution that has made the country what it is and trace to its birthplace the blood that has really quickened the country's life, making its characteristic part which it is its whole, we shall find ourselves gravitating always to Virginia, the Carolinas or New England. Whatever Mr. Wilson may mean by the "characteristic part," the characteristic action and habit is precisely what we do not find in New York or Pennsylvania, except in so far as the recent metropolitan growth of New York has put its stamp upon city and business habits the country over.

Standing on Carolina ground, Mr. Wilson must, if he possesses any imagination, have felt a rush of angry angelic wings when he attributed the strength of America to the mongrel populations of New York and Pennsylvania. Washington, Jefferson, Madison, Monroe, Jackson, Harrison, Taylor, Henry, the whole immortal brood of the Lees, Marshall, Lincoln, Houston and the pioneers of the Southwest and California must all have risen up to controvert him with the mere presence of their indignant shades. These Southern heroes would have carried with them a great share, indeed, of the initiative, the inspiration, the controlling suggestion of the political institutions that have made America. Their political genius was beyond anything else of that sort that we have had in America, and to this day their descendants have kept flowing purely the current of the blood on whose drops their public capacity was nourished. And if to their genius be added the keen social sense that was developed in New England, which gave its little town-meeting parliament to America, which took its own part in writing constitutions and furnishing Presidents, and which, by its literary and scientific achievements, has furnished the tie that has bound the whole nation into one, as a sheaf of ripe grain is bound together, we shall find little left for the "characteristic part of America" to do.

Against the Southern hive that must have buzzed around Mr. Wilson's ears as he spoke, the mixed Middle States would have brought but a meager band of Presidents, for example, to sustain his view. Van Buren, surely not a law-giver or a moulder of States; Buchanan, weakest of

Presidents; Fillmore, a Yankee, and not a great one, born over the line in New York, and Roosevelt, by far the greatest of that company, mixed in blood, it is true, but deriving his political genius from a Southern mother as surely as he derived his fine stubbornness from his Dutch paternal ancestry. Not a large company. Yet in considering the question whence the characteristic thing in our life has come, we may dismiss, perhaps, the list of our great men, and look for basic institutions, for governing thoughts and habits; and if we take a single one of the new States of the West and examine its life and history for the origin of such basic things, we shall find that, although many thousands of the people have come to these States from Pennsylvania and New York, it has always been the influence of Southern and New England men among them that has survived in the local life and institution. All else has proved ephemeral; there is not a trace of the life of Holland or of the German Palatine; in the courthouse, in the town hall, in the church, in the public library, at the fireside, everything harks back to New England or Virginia. James Bryce tells us in his American Commonwealth that through the town meetings New England puts its stamp upon three-quarters of America. What institution of New York or Pennsylvania has done as much as that?

New England is able to take care of its own record, so far as the characterizing of our general race is concerned. So is the South—so is Virginia. Mr. Wilson may attack the record—for what purpose heaven only knows—but he can scarcely shake it.

## A NEW VISION OF THE SOUTH.

WITH a view to bringing to pass the possibilities of development in its territory and of making known more widely than it has ever done the advantages of the central South from Virginia to Florida and Alabama, the Seaboard Air Line Railway Company has planned a far more comprehensive scheme of development and of publicity than it has ever before undertaken.

In this new move the Seaboard should be vigorously followed by every road in the South which is not now on a large scale doing work of this kind. The Southern Railway and the Clinchfield and the Baltimore & Ohio, and a few other roads here and there have intelligently grasped this situation and they have been vigorously at work doing things, but many roads in the South have fallen woefully short of the opportunity.

They are without a vision.

In some cases neither the officers nor the financial powers that control them appear to have any vision or conception of what can be done for the larger development of the South. If you talk to them about what opportunities the South has, and how these opportunities can be turned into tangible wealth as has been done in California and in other Pacific Coast States by the power of railroad work, there is a blankness and apparent inability on their part to realize that the South has the resources claimed for it, or that they can be developed on a scale commensurate with what has been done on the Pacific Coast.

The MANUFACTURERS RECORD recalls with interest a statement made some years ago by the president of one of the great roads of the South when he said to the writer:

"I don't believe that the South has the advantages that you claim for it, nor do I believe it possible that this section can have such a development as you have indicated."

The man who made these statements has long since passed to the other world, but all that had been outlined to him as to the development of the South was fulfilled many years ago, and every day, as new sources of wealth and new resources are opened up in the South, it is seen that the statements made of the South's natural advantages were far less than the actual reality.

In reply to an inquiry as to the new plans which the Seaboard has undertaken, Mr. B. L. Hamner, the general development agent, in a letter to the editor of the MANUFACTURERS RECORD, says:

I am quite sure that the officials of all of the Southern railroads have long appreciated that they serve a country which has a climate that is incomparable, and that the mileage of most of these roads is through a practically virgin country.

So great are the opportunities in the South and the possibilities are so many that in times past I believe they have gone upon the theory that any man who could see the conditions would be appreciative of the possibilities and have depended upon the inherent qualities of the territory they serve to attract people and capital; and that

other sections less favored in the matter of soil and climate have known that to attract people and capital required the seductive art of salesmanship, and while the South was depending upon merit other sections were depending upon their ability as salesmen.

Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama can be colonized, for have we not witnessed the colonizing of lands in Texas, Canada, North Dakota and many other places, where certainly there was not any more to offer than has the South; and in colonizing these lands the railroads have come to appreciate that merit must be combined with the art of salesmanship to accomplish the greatest result. The Seaboard Air Line Railway Co. has had what might be termed this "New Vision" for some time, and has become so strong in the faith that they have recently greatly increased the appropriation for the development department, and this department is being greatly enlarged and plans are being worked out for a systematic development of the territory served by them.

We are accepting as a cardinal principal that the great need of our territory is people, and we are going to do some immigration and colonizing work, which we believe will be most effective, but in that work we are going to see that the interests of the new settler are placed ahead of the interests of those having land for sale, and that settlers are going to be so placed that they can make a living and can earn a profit other than from the increase in value of their land, and that when these settlers are placed upon lands we will through our agricultural men give them advice and counsel, and eliminate as far as possible the necessity for experiment, and in this work we are going to recognize the frailties of humans and their desire for companionship of their friends, and so far as possible induce a number of settlers from a given section in a less favored country to a given section in our bountiful Southland.

Our plans are not fully developed, but they are broad and comprehensive, and we have in mind the value of a citizen who is successful, contented and happy, and his ability to produce traffic for our road.

Naturally, the bringing in of settlers for agricultural purposes will bring a train of commercial and industrial opportunities.

In an industrial way we are going to make a survey of the possibilities along our line and analyze the situation at each point and determine upon some industry that could succeed and prosper at that point more advantageously than at any other point, and endeavor to present all such possibilities in an intelligent manner to those interested in that line of industry.

As to the development of natural resources along our line, our research work will include research of geologists and other men trained in sciences.

We have furnished your advertising department with two pieces of advertising copy, the first to appear in your issue of June 15, and the second to appear the following week, which will acquaint you, first, with the conception of this road of its opportunity; second, a general outline of its plans to take advantage of those opportunities, and third, something of the methods to be used.

## CARRIAGE AND WAGON INDUSTRY DECLINES.

THE Census Bureau's summary concerning the manufacture of carriages and wagons and materials in the United States in 1914, compared with 1909 figures, shows the effect the automobile and motor-truck industry is having upon the horse-drawn vehicle business in the decided decrease noted in all branches of carriage and wagon making.

The number of establishments reporting in 1914 were 5320, or a decrease of 5.2 per cent., over the 5613 listed in 1909, producing an output, including parts, repairs, etc., valued at \$135,792,357 in 1914, a decline in value of 17.4 per cent. compared with \$164,420,558 in 1909.

In 1914 1,187,002 vehicles were manufactured, with a valuation of \$72,283,898, against 1,584,171 vehicles produced in 1909, which were valued at \$94,037,900, giving a decrease of 25.1 per cent. in the number manufactured in 1914 over 1909 and a decline of 23.1 per cent. in value for the same period.

Of this total number of vehicles, carriages decreased in number 33.8 per cent. and in value 30 per cent.; wagons decreased 9.1 per cent. in number and 13.1 per cent. in value; public conveyances 45.2 per cent. in number and 65.6 per cent. in value, and sleighs and sleds 49.9 per cent. in number and 44.8 per cent. in value.

Attention is called to the fact that the inroads of the automobile into the carriage and wagon industry has been greater in respect to pleasure vehicles than to those used for business purposes, and that carriage and wagon factories manufactured 1125 automobiles in 1904 and 544 in 1909, the increase being 106.4 per cent.



## A STRIKING LESSON IN SOUTHERN DEVELOPMENT.

ELSEWHERE in this issue is a group picture of a vast array of factory buildings owned by one company at Winston-Salem, N. C., and in the corner is a reproduction of a little factory of 1875, out of which this immense enterprise, with its 10,000 employees, has grown. A study of the picture showing the tiny factory in contrast with the array of great, modern factory buildings covering many acres of ground, is interesting as typifying the industrial advance of the South, from the day when, forty years ago, there were to be found scattered here and there through the South these tiny, little factories, cheaply built, cheaply equipped, but controlled by men of indomitable energy, men whose energy and brain power was their chief capital.

The story of Winston-Salem's advance to the very front rank among tobacco-manufacturing centers of the world is told in another part of this week's issue. The United States Census returns for 1914 show that Winston-Salem had an output of \$32,273,966 of manufactured tobacco, compared with \$32,207,893 output for St. Louis, which had, prior to that date, been the greatest tobacco-manufacturing center of the country. Winston-Salem in 1914 lead St. Louis by \$66,000. The Internal Revenue figures are even more striking, as they demonstrate the rapidly increasing advance Winston-Salem is making. The revenue collections for the year ending June 30, 1915, at Winston-Salem were \$7,844,331.43, as compared with \$5,579,252.94 for St. Louis, a difference in favor of Winston-Salem of more than 40 per cent. From the way the revenue receipts are increasing from week to week during the current fiscal year, it is altogether probable that the figures of June 30, 1916, will be even more strikingly illustrative of industrial development at that point. The weekly Internal Revenue receipts at Winston-Salem are now running at about \$272,000, which is more than the amount expended by the United States Government on the new federal building at that town. In other words, the Internal revenue receipts at Winston-Salem for the year would pay 52 times over the entire cost of this federal building.

The tobacco business is the largest industry in Winston-Salem's great development, although it has been a thrifty, prosperous, industrial center from the very beginning of the settlement by the Moravians on towards two centuries ago. While the article published elsewhere deals mainly with the tobacco industry of the town, there are many other interesting features in the Winston-Salem development which, however, could be given only incidental mention. The textiles, cotton and woolen, were early and successful industries at that point, and within recent years one concern has built up a knit-goods industry, which, it is understood, stands at the head of this branch of the textile business of the world. It has a trade that is not only national, but international.

What has been done at Winston-Salem is indicative of the development which to a greater or less extent is occurring all over the South, and which at this time has reached the stage here and there that gives promise of a magnitude and completeness in time as great as industrial New England has reached.

What Winston-Salem has done should be an inspiration to every other town in the South.

What Winston-Salem men have achieved in the creation of industries should stir into the greatest activity men in every part of the South; for what men have done, other men can do.

## AMERICAN MACHINE TOOLS FOR EUROPE.

INTERESTING information as to the expansion of the American machine tool trade in Europe is furnished by the Buffalo Forge Co., Buffalo, N. Y. In a recent letter to the MANUFACTURERS RECORD this statement is made:

There has been a very rapid development in the last few years of punches, shears and bar cutters for special work.

Reinforced concrete construction has created a demand for powerful hand tools for cutting round, square and twisted bars and for bending these and structural shapes.

Formerly most of these larger power tools were supplied by German makers, but since that source of supply was cut off this company has rapidly developed its own line, which is successfully meeting all requirements, and workshops in England and on the Continent are now being supplied with Buffalo armor-plate punches and shears.

## A UNIQUE FEATURE OF THE AMERICAN IRON AND STEEL BANQUET.

"MAN cannot live by bread alone."  
"Be not forgetful to entertain strangers, for thereby some have entertained angels unaware."

"Better is a dinner of herbs where love is than a stalled ox and hatred therewith."

"Behold how good and how pleasant it is for brethren to dwell together in unity."

These Biblical quotations are taken from the menu card of the dinner of the American Iron and Steel Institute given to its members on Friday last.

It is altogether probable that this is the first time in the history of this country that a great business organization—and the Iron and Steel Institute is the greatest business organization in the world—has adorned its menu card with Biblical texts. No one, however, who attended all of the much discussed Gary dinners, beginning in the fall of 1907, and who has followed the course of the discussions at the meetings of the American Iron and Steel Institute, which grew out of the Gary dinners, would be surprised at these most appropriate scriptural quotations appearing on the menu card last Friday. The whole spirit of the discussions at the Gary dinners and at the meetings of the Iron and Steel Institute have been centered not on how to make money, but on how to create genuine friendship among the iron and steel people, how to develop a spirit of co-operation in place of cut-throat competition, and how to better the living conditions and the rate of pay of the hundreds of thousands of employees.

To a great extent the speeches made at the Gary dinners and the papers which have been read from time to time at the meetings of the American Iron and Steel Institute have dealt with welfare work; stress has been laid upon the humanities, upon the necessity of bettering the conditions under which employees live, of providing comforts and conveniences in their homes, of furnishing playgrounds for the children, and of doing everything which would help to lift the employees out of drudgery and out of the adverse conditions under which they formerly lived into better surroundings, less of the hardships of manual labor and more of the ease which comes from assisting manual labor by mechanical contrivances.

If ever the true story of the discussions which took place at the Gary dinners on these subjects and of the addresses and papers presented at the meetings of the Iron and Steel Institute shall be written, the world will have a clearer appreciation than it has yet received of the tremendous influence which the iron and steel people of the country, under the leadership of Judge Gary, have, during the last nine years, exerted upon human affairs.

When this movement was inaugurated by Judge Gary, the MANUFACTURERS RECORD said that a new standard had been set which would mightily influence every line of business in this and in every other country, and that sooner or later men would come to realize that the old doctrine of competition as the life of trade meant simply the question of the "survival of the fittest and the devil take the hindmost," whereas the doctrine advanced by Judge Gary, and received with some skepticism when first promulgated, was that co-operation and friendly interest in each other's welfare would produce a larger volume of business, more general prosperity and bring about an acquaintanceship and a friendship such as had never before existed in the iron and steel trade.

It was not long before those who had the privilege of attending these Gary dinners realized

that in these suggestions a new plan had been promulgated, destined to change their old methods of business and to broaden their humanitarianism in their dealings with each other, with their customers and with their employees. This spirit was strikingly illustrated at one meeting, when one of the leading members read a paper on "The Golden Rule in Business," in which it was pointed out that this divine command was as applicable to business in dealing with customers, competitors and employees as it was in a strictly religious sense, to which so many have centered its meaning, and this was followed by a number of addresses illustrating and illuminating the effect of following the "golden rule" in business.

At the meeting of the American Iron and Steel Institute last Friday there were many addresses of much interest to iron and steel men. There were some which would be of interest to all business people everywhere, but none of these technical or business addresses were one-half so interesting or so significant in the broad sense of humanity's welfare as those which followed the line of thought indicated in these Biblical texts and in another fact suggestive of changed conditions.

At this banquet, attended by 700 of the foremost iron and steel people of the country, representing an industry in which some four or five billion dollars are invested, no wine was served, though those at the banquet had the privilege of ordering wine at their own expense if they so desired. Only a few ordered wine, and there was not the slightest indication in any part of the room at any time during the banquet that a single man had passed the bounds of propriety and been influenced by alcohol. In this respect this dinner indicated how the business leaders of the country are thinking on these matters and how rapidly the power of the liquor traffic is being lessened when such a gathering as this sets an example of having no wine served.

## CHATTANOOGA'S PREPAREDNESS CONVENTION.

THE sentiment of preparedness, in the sense of developing in this country adequate protection for defense, is growing by leaps and bounds. New York's great preparedness demonstration some weeks ago, and others which have been held in the larger cities of the country, have brought home to many of our public men the realization that the majority of the citizens of this country are alive to the situation and that they no longer can be misled by the Utopian dreams of the pacifists.

That the people of the South are as keenly interested in the proper safeguarding of this rich country and the protection of its people as are the people of the rest of the country has also become known to the authorities at Washington.

If any of the Southern Congressmen and Senators, or others, are in doubt as to the South's sentiment on the question of national defense, let them go to the National Preparedness Convention to be held at Chattanooga, June 2-4. The call for this meeting was endorsed by ninety-two mayors, representing twenty States. Persons of national prominence are lending their aid, and many of them will be present to help outline plans conducive to the best utilization of the country's resources in formulating industrial as well as armed preparedness.

It is to be hoped other cities of the South will follow Chattanooga's lead and thus show that the sentiment for protection is universal. The people of Knoxville have caught the spirit. A preparedness meeting was held in that city on May 27 under the auspices of the National Security League and the Knoxville Board of Commerce, and included a "preparedness" parade preliminary to the meeting, which was participated in by the Tennessee National Guard and other patriotic organizations. Recommendations for national defense made by the Army and Navy Staff were endorsed, and resolutions were adopted at the conference urging Congress to enact adequate preparedness legislation.

## INDUSTRIAL CENSUS OF NORTH CAROLINA, MISSOURI AND TEXAS.

COMPARED with the Census Bureau's figures for 1909, the 1914 preliminary census reports just issued relative to industrial interests in the States of North Carolina, Missouri and Texas show a marked increase in every line, with the exception that Missouri reported a decline of 6.4 per cent. In the number of proprietors and firm members and a .5 per cent. decrease in the average number of wage-earners employed during the year.

The percentage of increases for the several items in North Carolina rank as follows: Salaries, 48.4 per cent.; materials, 39.5 per cent.; services, 36.4 per cent.; primary horsepower, 34.3 per cent.; wages, 34 per cent.; value of products, 33.6 per cent.; salaried employees, 30.9 per cent.; value added by manufacture, 26 per cent.; capital investment, 16.9 per cent.; persons engaged in manufacture, 13.4 per cent.; average number of wage-earners, 12.6 per cent.; number of establishments, 11.7 per cent., and proprietors and firm members, 9.1 per cent.

In 1914 the capital invested in manufacturing enterprises in North Carolina was \$253,842,000, a gain of \$36,656,000, or 16.9 per cent. over \$217,186,000 in 1909, while the value of the State's manufactured products was \$289,412,000 in 1914, and \$216,656,000 in 1909, the increase being \$72,756,000, or 33.6 per cent.

For Texas, the highest percentage of gain was in materials, which amounted to 42 per cent., followed by a 32.4 per cent. gain in output; salaries, 32.1 per cent.; capital invested, 30.7 per cent.; services, 21.3 per cent.; primary horsepower, 18.9 per cent.; wages, 18.2 per cent.; salaried employees, 16.5 per cent.; value added by manufactures, 14.2 per cent.; number of establishments, 10.8 per cent.; persons engaged in manufactures, 7.7 per cent.; average number of wage-earners, 6.6 per cent., and an increase of 6.5 per cent. in the number of proprietors and firm members.

The amount of capital invested in manufacture in Texas, as reported in 1914, was \$283,544,000, a gain of \$66,668,000, or 30.7 per cent., over \$216,876,000 in 1909.

During the same period the value of Texas' manufactured products increased \$88,383,000, or 32.4 per cent., the total valuation for 1909 being \$272,896,000, and in 1914, \$361,279,000.

Missouri, in 1914, had a capital investment in industrial enterprises of \$522,548,000, and in 1909 \$444,343,000, a gain of \$78,205,000, or 17.6 per cent., producing an output valued at \$637,952,000 in 1914, an increase of \$63,841,000, or 11.1 per cent., compared with \$574,111,000 in 1909.

In the accompanying table a summary of the manufacturing census is given for North Carolina, Missouri and Texas.

### SUMMARY OF CENSUS.

North Carolina.			Missouri.			Texas.		
	1914.	1909.		1914.	1909.		1914.	1909.
Number of establishments...	5,507	4,931	11.7	8,386	8,375	0.1	5,084	4,588
Persons engaged in manufactures	151,333	133,453	13.4	188,266	185,705	1.4	91,114	84,575
Proprietors and firm members	5,950	5,451	9.1	7,698	8,226	-6.4	4,787	4,496
Salaried employees	8,541	6,529	30.9	28,386	24,486	15.9	11,474	9,849
Wage-earners (average number during year)	136,844	121,473	12.6	152,182	152,993	-0.5	74,853	70,230
Primary horse-power	508,235	378,556	34.3	391,385	340,467	15.0	335,791	282,471
Capital	\$253,842,000	\$217,186,000	16.9	\$522,548,000	\$444,343,000	17.6	\$283,544,000	\$216,876,000
Services	\$56,283,000	\$41,259,000	36.4	\$126,495,000	\$109,837,000	15.2	\$59,179,000	\$48,775,000
Salaries	\$10,244,000	\$6,904,000	48.4	\$37,297,000	\$28,994,000	28.6	\$14,358,000	\$10,868,000
Wages	\$46,038,000	\$34,355,000	34.0	\$89,198,000	\$80,842,000	10.3	\$44,821,000	\$37,907,000
Materials	\$169,942,000	\$121,861,000	39.5	\$388,715,000	\$354,411,000	9.7	\$253,090,000	\$178,179,000
Value of products	\$289,412,000	\$216,656,000	33.6	\$637,952,000	\$574,111,000	11.1	\$361,279,000	\$272,896,000
Value added by manufacture (value of products, less cost of materials)	\$119,470,000	\$94,795,000	26.0	\$249,237,000	\$219,700,000	13.4	\$108,189,000	\$94,717,000
(-) decrease.								

## INDUSTRIAL PROGRESS OF SOUTHERN CITIES.

FROM census reports just issued of a number of Southern cities the MANUFACTURERS RECORD has compiled the following figures:

### SUMMARY OF CENSUS.

City.	Number of establishments.	Capital Invested.	Per-centage Increase over 1909.	Value of Products.	Per-centage Increase over 1909.
	1914.	1909.		1914.	1909.
Anniston, Ala.	40	39	\$3,810,000	\$4,345,000	-12.3
Montgomery, Ala.	83	73	7,212,000	5,234,000	37.8
Newport, Ky.	100	144	5,503,000	4,568,000	20.5
Covington, Ky.	161	196	7,778,000	6,634,000	17.2
Frankfort, Ky.	31	32	4,094,000	3,366,000	21.6
Paducah, Ky.	75	91	4,452,000	4,703,000	-5.3
Bessemer, Ala.	47	30	6,659,000	7,444,000	-19.5
(-) Decrease.					

The number of establishments, manufacturing products with a total value of \$500 or more a year, in Bessemer, increased from thirty in 1909 to forty-seven in 1914, a gain of 56.7 per cent.; Montgomery's industries increased in number from seventy-three in 1909 to eighty-three in 1914, a gain of 13.7 per cent., while for the same five-year period Anniston showed a gain of one establishment; Newport dropped from 144 to 100; Covington had thirty-five less; Frankfort lost one and Paducah lost sixteen. The word "establishment" may mean more than one mill or plant, provided they are owned or controlled and operated by a single individual or corporation and are located in the same city.

In Bessemer the amount of capital invested in manufacturing enterprises was \$6,659,000 in 1914, a decrease of \$785,000, or 10.5 per cent., compared with \$7,444,000 in 1909. Notwithstanding this decrease in invested capital, the value of Bessemer's manufactured products was \$6,023,000 in 1914 and \$5,801,000 in 1909, a gain of \$222,000, or 3.8 per cent.

Montgomery in 1914 showed an increase over 1909

of \$1,978,000, or 37.8 per cent. in the capital invested and an increase of \$2,338,000, or 43 per cent., in the value of its manufactured output. The total amount of capital invested being \$7,212,000 in 1914 and \$5,234,000 in 1909, and the total value of products was \$7,780,000 in 1914 and \$5,442,000 in 1909.

For Newport, Ky., in 1914 there was reported \$5,503,000 invested in industrial enterprises, a gain of \$935,000, or 20.5 per cent., over \$4,568,000 in 1909, and its products in 1914 were valued at \$8,306,000, a gain of \$1,815,000, or 28 per cent., over \$6,491,000 in 1909.

There was a decrease of \$535,000, or 12.3 per cent., in the amount of capital invested in manufacturing enterprises in Anniston in 1914, compared with 1909, but an increase of \$32,000, or .7 per cent., in the value of its products.

Although Covington and Frankfort, Ky., each showed for the five years increases of 17.2 per cent. and 21.6 per cent., respectively, in the capital invested, their output declined in value 5.1 per cent. and 17.4 per cent., respectively.

In 1914 Paducah had \$4,452,000 invested in manufacturing, a decline of \$251,000, or 5.3 per cent., compared with \$4,703,000 in 1909, and its output, which was worth \$4,967,000 in 1914, was less by \$476,000, or 9.6 per cent., than the amount produced in 1909.

## THE HEART OF ANGLO-SAXONISM.

AT the Southern Baptist Convention, held in Asheville, N. C., last week, it was stated that nearly 75 per cent. of the Baptist preachers of the South affiliated with the convention were born within a radius of 150 miles of Asheville, and that North Carolina has supplied more teachers for the denominational schools than any other one State in the South. The reasons given were these:

"The blood of these people of the Southern highlands is the purest Anglo-Saxon on the American Continent. It is uncontaminated and is as it was hundreds of years ago. Their ideals are of the highest."

It is well known that many of the foremost ministers of the South, men of commanding intellectual and spiritual power, have been born in these mountain regions. This fact has for years been discussed in connection with work of all religious bodies in the South. Out of this same region have also come many of the ablest business men of the South.

This mountain region has been like a great spring, pouring forth an unceasing stream of living water in the shape of men and women, and many of them have been of exceptional intellectual attainments.

It is worth remembering these facts in a study of the South, for from such a population there is constantly arising a tremendous power for the good of the South and the nation. In this mountain region, nearly 700 miles in length, there is a source of human power for the workshop and laboratory matching the natural resources of this section, with man-power which has furnished so many preachers of commanding ability and so many teachers whose work is seen throughout every part of the South. This heart of Anglo-Saxonism of the world, which is less intermixed with foreign blood than any other Anglo-Saxon region on earth, is destined to play a mighty part in the industrial, financial and moral advancement of the nation.

In "Our Southern Highlands" it is pointed out that the Southern Appalachians cover an area larger than New England, and that the mountain chain, 650 miles in length from Virginia to Alabama, has a larger area than England and Scotland.

In this mountain region of the South, which is nearer to the center of population than any other mountain region of the country, there are, south of the Potomac, forty-six peaks and forty-one miles of dividing ridges that rise above 6000 feet in elevation. There are 288 mountain peaks and 300 miles of divide more than 5000 feet in elevation. In North Carolina alone the mountain region covers 6000 square miles, with twenty-one peaks higher than Mount Washington.

Out of this mountain region 180,000 riflemen—and there are few finer riflemen in the world than these people—joined the Union Army during the Civil War and contributed very largely to its success. The people of this mountain country were largely Union in sentiment at the time of the Civil War, and were almost universally opposed to slavery. Even today there are few negroes in much of this region, and there are some sections of it from which negroes are warned by the local people to keep away.

This country, with its great peaks and its hundreds of miles of divides, with its superb climate, its mountains bursting with mineral wealth, its water powers developed and undeveloped, should become the great workshop of America for the highest class of skilled labor. In these regions the skill of the Swiss watchmaker, and the lacemaker, should be duplicated; and here should be developed industrial activities to give employment to millions of men and women who could live under climatic advantages the year round not surpassed, if equaled, anywhere else in this or any other land.

## Cotton Machinery and Lubricating Oils.

G. Dossa & Co., cotton merchants of Bombay and Kobe, P. O. Box 827, New York:

"Our company would be glad to become agents, in India, of American manufacturers of ginning and pressing machinery, cotton-mill machinery, and of lubricating oils."



# To Produce Oxygen and Nitrogen from Air—An Opportunity for the South

BROAD PLANS OF NEW YORK AND FRENCH CAPITAL IN COMBINATION.

[Special Correspondence Manufacturers Record.]

New York, May 29.

The Air Reduction Co., 50 Broad street, New York, has acquired American rights to the French process for extracting liquid oxygen and liquid nitrogen from the air, and will enter extensively into the manufacture of nitrogen products in this country.

Incorporated at Albany with a capital stock of \$2,500,000 preferred stock and 35,000 shares of common without par value, and backed by Rockefeller and Westinghouse interests, as well as French and other American interests, the company has already under way plans that call for a largely increased capitalization and a wider scope of activity than was originally contemplated.

Walter W. Birge of St. Louis, who is president of the company, has with him on the directorate Percy A. Rockefeller, son of William Rockefeller; W. T. Hollingsworth, for years representative of the Westinghouse interests in Europe; Lorenzo Semple, counsel for the French Government; Ambrose I. Monnell, president of the International Nickel Co. and representatives of the Societe de l'Air Liquide of France.

President Birge states that the company will probably increase its capital to \$5,000,000 within 60 days, and ultimately its capital stock may reach \$50,000,000.

The company has plants now in operation in Chicago, St. Louis, Brooklyn, Philadelphia, Newark and Pittsburgh, and will put construction forces at work building 8 or 10 plants in other cities soon.

An oxygen station has been established in Baltimore, and it is the present intention of the company to build one of its plants there.

On this point President Birge said: "We shall build a plant in Baltimore and others in different sections of the country, but we cannot state now just where they will be located. We are studying the whole question carefully to ascertain just what can be done.

"We shall try to supply the demand for industrial uses of nitrates and oxygens as well as to sell for the manufacture of explosives. It is not possible for us to say yet exactly what we shall do in the South in the matter of locating plants. We have not yet determined whether we shall concentrate our plants at one central point, using a large amount of power, or locate them in separate units wherever the commercial possibilities make the outturn of nitrogen products feasible and practicable.

"The fact should be borne in mind by the people of the South who want industries located there that protection is necessary for an industry of this sort. The protection duty need not be high, for personally I am not a high protectionist, but it should be enough to enable manufacturers to compete in peace times with Chile saltpeter and German nitric acids and basic products for fertilizers.

"When the war ends and business conditions are normal the price of Chilean nitrates can be any figure the Chilean Government names, and the nitric acid plants of Germany now in operation can send nitric acid here cheaper than it can be made in the United States by either private enterprise or Government funds.

"Our country should be prepared for any eventuality, and this may properly be called a step in preparedness, but while any concern can make nitric acid in war time at war-time prices, the free-traders want American manufacturers to establish plants for producing nitrogen products, ammonia, oxygen and nitric acid, when the only market possible in peace time is that part of the American demand that neither Chile or Germany wants to supply.

"We get aroused over the necessity for a bigger navy, a larger army, a nitrate supply, and shout for the omission to be remedied over night. We ask that these things be done without adequate protection to the manufacturer. He is expected to compete with the world in times of peace and with countries already equipped for economical production. And when war comes he is to have ready for service a plant able to turn out the

entire domestic supply immediately upon the cutting off of imports from foreign countries.

"The securing of an adequate supply of nitrogen products for the army and navy in times of war and at all times for the demands of agriculture, equally as important and imperative upon a nation as those of the army and navy, can be brought about only through costly experiment and investigation of processes. The Government has not as yet any practical plan. It is working, but as in the case of all others, patient and costly investigations and experiments will be found necessary before results are attained.

"We shall make ammonia, oxygen and nitrogen, and, of course, nitric acid. Liquid air bombs made by our process are being used by the French in their trench fighting with hand grenades, and we have two men in Europe now studying processes."

From other sources it is learned that the Government's plan for establishing a \$20,000,000 nitrate plant is not considered as adequate to make the United States independent of outside sources of nitrate supplies in the event of war. It is pointed out by experts that a plant of the size proposed in the Government plan could turn out less than one-eighth of the amount of nitric acid used under normal conditions, and a much smaller percentage, of course, in the event of war with any first-class power.

Chile still remains the only source of supply of free nitrate sodas. In 1915 the United States imported from Chile about 800,000 tons of nitrates, which is the equivalent of practically 550,000 tons of nitric acid. There are only three great sources of nitrate combinations open to the United States. They are the mineral deposits, nitrogen in ores, found only in Chile; nitrogen in the air and nitrogen in coal.

To extract atmospheric nitrogen gas, to mix the oxygen and nitrogen of the air by passing them through an electric arc, thus securing nitric oxide, requires a vast amount of water power available for electrical generation and at a cost lower than can now be obtained here because of the refusal of Congress to let the water power of Southern streams be developed by private capital.

The Air Reduction Co., recognizing the acute situation as to the supply of nitrogen available for the United States, plans to use its capital for the development of that commodity, invaluable for agricultural purposes and absolutely essential in the manufacture of explosives.

## To Manufacture Building Products from Sawdust, Paper and Similar Waste Materials.

The National Paper Products Corporation has been organized with a capital stock of \$100,000 for the purpose of utilizing waste paper, sawdust and other similar waste materials in the manufacture of substances which can be used as substitutes for lumber, hard rubber, ebony and fiber board for general interior decoration and wall boards. It is the intention of the promoters to make this corporation the parent company from which auxiliary companies will be established in the larger cities of the United States, the parent company to hold a controlling interest in the auxiliary company and have charge of the entire situation as regards the conserving of waste products.

E. G. S. Ricker, 1911 Eutaw Place, Baltimore, one of the prime movers of the new corporation, states that under the processes controlled by his company, waste paper and sawdust can be utilized to manufacture a product adaptable for all purposes in which lumber is now used for general construction, and that it is superior in tensile strength, density and non-porousness to lumber. For interior or exterior use in place of wood it can be painted, stained, filled or varnished, and on account of its great wearing qualities it is said to be a superior flooring material. Furthermore, it is claimed that, being non-porous, this material is very durable under atmospheric conditions, sanitary because of its

resistance to germs, is soundproof, and to a great degree fireproof.

Another form of this product, said to be made under the corporation's formula, is a composition which is claimed to offer unlimited possibilities in the insulation field as a substitute for hard rubber because of its powerful electrical resistance. Mr. Ricker asserts this product has many advantages over hard rubber, in that it is not brittle, has great toughness and tensile strength, repels dampness and has great dialectic strength, together with the essential feature of a low cost of manufacture.

## GREAT STIMULUS TO LOUISIANA'S SUGAR INDUSTRY.

Removal of Free-Trade Menace Encourages Activity, but Relief Comes Too Late for Some.

New Orleans, La., May 30.—[Special.]—Estimates of the sugar crop of the current year as indicated by the present acreage and present condition are fixed at something like twice the actual production of the last season in tons of sugar.

The judgment of probable price, with continued war, is of a range nearer 7 cents than to 5 cents; nearer 6 cents than to 4 cents, even should the war cease and the workers go back to the fields during the present summer.

Meantime, with the tariff restored indefinitely, a good crop and profitable prices in prospect, the process of readjustment in Louisiana continues.

During the past week the Pharr interests purchased a great factory in Vermilion parish which has been idle for three years, and are to repair and reopen it this autumn.

The Opelousas syrup and sugar plant, owned by a stock company, idle for two years, has been bought by Alexandria interests and will be run for molasses this coming season.

Credits have been quickened. Many orders for repairs, for rebuildings, for betterments of minor sorts, are being received by the machinery people in New Orleans. Implement trade to the sugar district, of course, is largely met for the cultivation period, but plantation railroads, hoisting machinery, etc., are due for overhauling. Ditching machines are needed. There will undoubtedly be a large demand for mules this autumn on a market where mules are becoming increasingly valuable.

But while all this goes on, some of the older plantation administrations are being reorganized to meet new conditions.

The great Myrtle Grove properties of Col. Theodore S. Wilkinson, show places for two generations, fronting the Mississippi River below New Orleans for 15 miles, valued at \$1,000,000, was sold under the hammer by the Mortgage Securities Co. of New Orleans, holder of \$371,000 of debts, and by the Mortgage Securities Co.'s representatives bought in for a sum just sufficient to meet the obligations.

Plans are already drafted for the organization of a new owning company, which is to take over the property, recognizing all creditors as stockholders, recognizing a certain equity to Colonel Wilkinson, and is then to operate it as a sugar-producing property so long as the sugar-growing business possesses a future as alluring as the present.

Colonel Wilkinson was Congressman from Louisiana in the days of the fight over the bounty. He was candidate for the Democratic nomination for Governor in 1908, and one of the arguments against him was that he was a "sugar baron" and owned "twenty miles of river front."

Last autumn a splendid sugar crop was heavily damaged by the hurricane of September. The mortgages which subsequently fell due could not be refunded in time. The uncertainty over the tariff was not ended until chance for arranging a refunding had passed.

The officers of the new company, termed the "Pointe Celeste Company," are Levering Moore, president; John Dymond, Jr., vice-president; Harold P. Nathan, secretary and treasurer.

The plantations included in the whole property are La Reussite, Alliance, St. Rosalie, Myrtle Grove, Wood Park, Deer Range, Junior, Pointe Celeste, Woodland, Orange Grove and Avenida. On the property is a 1000-ton sugar mill and a number of fine plantation homes.

# Nitrogen Possibilities As Outlined by the Smithsonian Institution

[Special Correspondence Manufacturers Record.]

Washington, D. C., May 27.

According to the latest Geological Survey reports, the United States is now producing ammonium sulphate at the rate of 212,000 tons per year, or five-sixths of the total now available to Germany in her present extreme crisis.

Such progress has been made in the gradual elimination of the beehive oven in favor of the by-product oven, with the resultant production of nitrogen, that the Smithsonian Institution has now gone on record with the statement that an adequate nitrate supply should be among the smallest problems confronting this country in the event of war. The MANUFACTURERS RECORD from time to time has reported the progress of the country in the production of nitrates.

As one phase of the experiments which are being made to supply the needs for the growing demand for fertilizers and the ingredients needed in the manufacture of powder for war purposes, there was set forth in these columns recently an article by Charles Catlett, chemist and geologist, showing what can be done in the production of potash as a by-product of iron ore. The work that is being done by the Bureau of Soils and the Bureau of Mines also has been set forth, but it remains for the Smithsonian Institution to add what may be regarded as one of the final chapters to the progress being made in the development of a sufficient supply of nitrates and potash.

At the United States National Museum the Smithsonian Institution has assembled an exhibit covering the work that has been done in the United States to produce an adequate supply of nitrates. The object of the exhibit is to show how the United States can become independent of Chilean sources in the production of nitrates for explosives and fertilizers. The Smithsonian makes the following authorized statement as a supplement to what has already appeared in the MANUFACTURERS RECORD on this general subject:

Attention has of late been attracted to the important bearing of nitrogen on the self-supporting capacity of a country cut off by any emergency, such as war, from external sources. In view of this important part played by nitrogen, it is worth while to know the available sources within the United States, and to this end the United States National Museum has just assembled an exhibit covering the situation.

As indicated in the exhibit, there are three great sources of nitrogen, namely, mineral deposits of nitrogen in ores, nitrogen in the air and nitrogen in coal, together with its present-day analog peat. Of the three, the first-named source is at present confined entirely to Chile, and it is doubtful whether any significant deposits will ever be uncovered in this country.

The air is composed of approximately four-fifths nitrogen, and therefore affords an absolutely unlimited source if feasible means were available for the extraction of this atmospheric nitrogen gas and its conversion into some usable form. The employment of atmospheric nitrogen involves the problem of forcing the nitrogen gas to enter into chemical combination with other elements such that, under ordinary conditions, it will be in liquid or solid state available to use, or, in technical parlance, become "fixed." The underlying difficulties in this problem are in the inherent fact that nitrogen is chemically inert and extremely difficult to stimulate into the activity of entering into combination. This fact is forced home by the reflection that, throughout the ages of the earth's existence, its atmosphere has consisted of the selfsame oxygen and hydrogen most intimately mixed. Had there been the least susceptibility on the part of the nitrogen, its complete combination with oxygen would have taken place long ago, and the earth's atmosphere would be devoid of life-sustaining oxygen, and in place of water our oceans would be composed of concentrated nitric acid.

Much has been said recently about the process of extracting atmospheric nitrogen by means of electricity. It is a fact that, in passing through an electric arc, the oxygen and nitrogen of the air combine to form nitric oxide—which accounts for the odor which is so noticeable in the immediate vicinity of a flash of light-

ning. Many attempts have been made to put this scientific fact on a practical basis, but thus far the only commercially successful efforts have been made in Norway, where an enormous amount of water power is available for electric generation at a cost of about a third or a fourth that for similar development in our country. The power requirements necessary to this so-called arc process are vast, and, accordingly, power costs have prevented extension of its uses on any great scale outside of Norway.

Another method of recovering nitrogen from the air, known as the cyanamid process, is dependent on the fact that ordinary calcium carbide, when heated to the proper temperature, may be made to absorb nitrogen gas, forming a combination of calcium, carbon and nitrogen, known as calcium cyanamid, a name with which most farmers using fertilizers are familiar. Cyanamid manufacture employs only about a fifth the electric power required by the arc process, but nevertheless electric power is a very considerable factor in its cost of production, and, like the arc process, it has not obtained a foothold in this country.

A third means of rendering atmospheric nitrogen available is known as the Haber process, which takes nitrogen from the air and hydrogen from water. By means of great pressure they are made to combine into ammonia, a combination of these two elements in the ratio of one to three. This process has been developed in Germany, but owing to technical difficulties has not made great headway even in that country.

Coal contains about 1 per cent. of nitrogen, and in the course of coal-product operations, such as the manufacture of coke in connection with metallurgical work, or of gas for municipal supply, the nitrogen emerges in the guise of ammonia. In this, the third great source of fixed nitrogen, our country has advanced to greater proficiency; we are producing coal-product ammonia at the rate of nearly one-quarter of a million tons in sulphate form per year. The amount is constantly increasing as modern methods of by-product coking replace the antiquated wasteful beehive methods, whereby another half-million tons are still allowed to escape annually along with proportionate amounts of other valuable coal products.

No matter what the present associations of nitrogen are, whether in coal, mineral nitrate deposits or what-not, the atmosphere is the original source of nitrogen. When we speak of the three current sources, it is only by way of indicating the present-day whereabouts of the major portion of the earth's supply, for it is more or less ever present. The processes mentioned do not by any means account for all of the nitrogen entering to the wants of man. When the farmer raises a crop to be plowed under as fertilizer, for instance, he is merely establishing a temporary atmospheric nitrogen plant of his own. Along the same general line, cottonseed and various other organic materials are nitrogen-bearing to an important extent; still, broadly speaking, the processes enumerated are the agencies upon which the world is dependent today not only for the artificial means with which to wage wars, but, what is far more important, the means of providing food for the hungry mouths fighting at the battlefield and laboring at home.

In this connection the current situation in Germany is of special interest, cut off as she is from imports and dependent upon her own resources. At the outset they consisted in a highly-developed coal-product industry yielding sulphate of ammonia at the rate of a half-million tons a year, a cyanamid industry netting around 60,000 tons of cyanamid, and a Haber process development capable of about 30,000 tons annually.

Since then she has had to meet her enormous demands for nitrogen in the form of nitric acid in munitions manufacture, while at the same time providing for her less warlike needs, such as agriculture. To do this she has erected one small arc-process plant capable of a few thousand tons production, enlarged her Haber process activities to the extent of about 200,000 tons of ammonium sulphate and developed her cyanamid production to a total of well over half a million tons. These, together with her coal-product ammonia, repre-

sent a grand total of over one and a half million tons of ammonium sulphate from which to meet her combined nitrogen requirements.

## BIRMINGHAM GETS FIRST ALL-WATER TRANSATLANTIC SHIPMENT.

Movement Under Way to Establish Close Relations Between City and Warrior River.

Birmingham, Ala., May 27.—[Special.]—The first all-water transatlantic movement of freight to the Birmingham district is now being made. Holbrooks, Ltd., Birmingham, England, manufacturers of Worcestershire sauce, have shipped a cargo of sauce to Earle Bros., wholesalers, of Birmingham. At New Orleans the goods will be taken aboard a self-propelled barge and brought up the Warrior River to a point which will eventually be within the city limits. There Earle Bros. trucks will meet the consignment and fetch it to warehouses. The shipment followed the visit to Birmingham some time ago of the English agent of the Holbrooks concern and the establishment of an agency here. Freight rates were satisfactorily arranged. While the shipment is of no great magnitude, it is treated with serious regard as indicating to what uses the Warrior may be and will be put when Birmingham is better equipped to take advantage of it.

That Birmingham will be headed to the Warrior River in a practical way in the very near future now appears assured. The county board of revenue will be asked to build a road from the western outskirts of the city to the river via the steel mills, iron furnaces and largest coal mines of the Tennessee company, the vice mill of the American Steel & Wire Co. and through the busiest industrial section of the Birmingham district to Nichols Fish Trap, on the Locust Fork, near the head of navigation.

The air line distance is 10 miles from the city limits; the road curvature makes it 14 to 16 miles. The board of revenue will be asked to issue \$275,000 of 5, 10 and 20-year county warrants at 4% per cent. interest. Financiers have agreed to take the issue. Rights of way have been secured and options obtained on river front for wharfage. The annexation of the strip is feasible. The water at the Fish Trap is eight feet deep, one and one-half feet more than necessary, the river locks being built for 6½ feet draft. This depth is minimum the year around. Two miles below the Fish Trap the Tennessee company is now shipping coal to New Orleans in self-propelled barges, and two miles below that the Pratt Consolidated is shipping its Maxine coal to Mobile and New Orleans by barge and towboat.

The recommendations to the board will be in consonance with the report of Federal Engineer W. A. Crossland, and preliminary reports, in which Mr. Crossland coincided, rendered by County Engineer Geo. H. Clark and City Engineer Julian Kendrick. Government Engineer George K. Little of Tuscaloosa, in charge of the Warrior River work, contributed valuable data on which findings were made.

## Sand for Glass-Making.

The production of glass sand in the United States increased very materially in 1915, as compared with 1914. The demand for window, plate and wire glass was strong, and there was a considerable export trade in glass bottles, as well as flat glass.

The following table, compiled by R. W. Stone of the United States Geological Survey, shows the glass sand produced in 1915:

	Quantity (short tons).	Value.
Illinois .....	566,128	\$398,268
Indiana .....	107,560	40,240
Missouri .....	145,920	91,200
New Jersey .....	84,120	64,880
Ohio .....	128,758	123,320
Pennsylvania .....	455,112	550,720
West Virginia .....	264,076	280,720
	1,751,674	1,456,700

The production in Missouri, Ohio and Pennsylvania was slightly less than that in 1914. The greatest increase was in Illinois and Indiana. It is notable that Indiana, which produced only 1842 short tons of glass sand in 1913, made a yield of 36,977 tons in 1914, and in 1915 increased the tonnage nearly 300 per cent. over that of the previous year. The total production of these seven States in 1915 was an increase of nearly 250,000 tons over 1914.



# PREPAREDNESS IN IRON.

A Study of Our Industrial Dependence on an Ore Supply Liable to Quick Suppression in the Event of War—What the Resources of the Great South Mean to the Nation.

[From New York Sun.]

To the Editor of The Sun—Sir: While the members of the American Iron and Steel Institute, representing the billions of dollars invested in the vast iron and steel interests of this country, are gathering in New York on Friday in their annual meeting it might be well for them to give consideration to a few facts which vitally concern their industry and the nation itself.

Between 90 and 95 per cent. of all the steel produced in the United States is made from ore the supply of which could be instantaneously cut off in time of war. It is needless to say that such a disaster would produce universal collapse in the financial and business interests of the country and make impossible any serious effort on the part of the National Government to protect itself. In the event of such a disaster as this, this nation would be as helpless as an infant against a giant, and we would be compelled to yield to any terms which our conquerors might name.

If there is any reason whatever for seeking to arouse the country to the necessity of national preparedness through the creation of an army and the building of a navy, there is exactly the same degree of reason for seeking to arouse the financiers and the iron and steel people and the Government itself to this danger to the nation and to all of its business interests, so long as existing conditions in iron and steel production are permitted to continue.

The Lake Superior ore region, which furnishes not far from 90 per cent. of the iron-ore output of the United States, is contiguous to Canada. This ore, amounting to 50,000,000 tons or more a year, passes through the "Soo" Canal, which engineers thoroughly familiar with the situation say could be instantaneously blocked at any time by a few sticks of dynamite properly placed. This dynamite could be dropped by a pedestrian or by an enemy from an aeroplane.

It would be impossible, if the canal were blocked, for the ore from the Lake Superior region to be transported by rail. That thought naturally comes into the mind of those who are not well informed on the subject; but a moment's investigation would show that it is not worthy of a moment's consideration.

This entire ore supply would be cut off if the Lake Superior region were captured by an enemy, and this would, of course, be the very first move which England would make if we should ever be at war with that country (though may Heaven forbid that this should ever take place), and it would also be the first move that any other country which by any means invaded us through Canada would make. But for the fact that the English fleet protects us it would be possible for other nations to invade this country through Canada very much more easily than Germany invaded France through Belgium.

At the beginning of the war Germany struck immediately for the iron and steel interests of Belgium and the adjacent section of France, and ever since that first move Germany has been seeking a larger control of the iron and steel interests and the iron-ore sections of the countries it has invaded.

Imagine for a moment that such a disaster to civilization could happen as war with Great Britain, and under such conditions within a day or two after war was declared about 90 per cent. of the entire iron and steel industry of the nation would have collapsed, because England would be in control of the Lake Superior district and the "Soo" Canal.

All of the munition-making plants of the country, including the production of armor plate, are based on the iron and steel produced by these Lake Superior ores and the limited amount imported, with some slight additions, immaterial in quantity, mined in New York and New Jersey. Though Pennsylvania produces about one-half of the steel made in the United States, it mines only about half a million tons of ore a year, or less than 1 per cent. of the nation's output. The limited ore production in New York and New Jersey would be of small importance if the Lake Superior supply were shut off; and, of course, if there is no danger that we will ever

be engaged in any great war, then there is practically no reason why we should build a big navy and create a large army.

The suggestion of the possibility of the capture of the Lake Superior ore region or the blocking of the "Soo" Canal is not one-half so chimerical as would have seemed any prediction two years ago of such fearful conditions as we are now seeing in Europe.

Imagine for a moment what would be our condition with about 90 per cent. or more of the steel interests of the country compelled to close because of their inability to get Lake Superior ores. It would be a catastrophe beside which that of Belgium would be tame, for it would then be too late to develop in time to meet such an emergency the vast iron and steel possibilities of Alabama and Tennessee and Texas and other Southern and Southwestern States. Outside of the limited development in the central South and in Colorado there would be practically no iron and steel-making plants in existence for peace or for war.

Selecting for a study of the situation 1913, by reason of the fact that war conditions did not then exist, it will be found that the total iron ore production of the United States for that year was 61,980,000 tons. Of this, the Lake Superior region produced 52,518,000 tons, or 86 per cent. of the entire output of ore in the United States, but as this ore is somewhat richer in metallic content than the leaner ores of some other States, it furnished about 90 per cent. or more of the iron production of the country.

The total production of steel in the United States in that year was 31,300,000 tons. Of this, Pennsylvania made 15,544,000 tons, notwithstanding the fact that it produced in that year less than 500,000 tons of iron ore. The total production of steel in that year in the South and Southwest, including Colorado and Washington, was in round figures 1,500,000 tons, or less than 5 per cent. of the year's output, while 29,800,000 tons were produced in the States dependent upon lake ores and a limited supply of foreign ores with the comparatively small amount of local ores in Pennsylvania and New Jersey.

It would be unspeakable folly for this country longer to permit 90 per cent. or 95 per cent. of its iron and steel and all of its munition making and armor-plate business to depend upon one ore supply so easily captured or shut off. The National Government would be guilty of criminal folly if it permitted this condition to last any longer than it is possible to bring about a change.

But while the business men of the country are wisely insisting that the National Government shall spend hundreds of millions in its preparedness campaign, have the financiers and the iron and steel people of this country a moral right to ask that this shall be done by the National Government so long as they permit all of the munition-making business, all of the armor-plate making and 90 per cent. to 95 per cent. of the steel production to be so situated as to be open to capture or destruction at any moment, even if we had a great navy and a decently large army? All preparedness work is an idle dream unless it takes into account this situation and gives heed to the necessity of the full utilization of the great potentialities available for iron and steel making and chemical industries far away from the seacoast, not easily reached by an invading army from any direction and not dependent upon Lake Superior or foreign ores.

The members of the American Iron and Steel Institute who will assemble in New York on Friday represent many billions of invested but uninsured wealth. This wealth cannot possibly be insured against dangers which would come upon us in time of war except through the development of iron and steel making and kindred interests far in the interior, utilizing the abundant supplies of ore and coal available in the South and Southwest. The members of the Institute and the financial forces back of the iron and steel business believe in insurance. Many of them are directors of insurance companies. Doubtless most of them carry heavy insurance on their lives. But they are permitting the most important thing in their individual affairs, in their position as trustee and in their interest in the nation's life to go unprotected by insurance. Until they have brought about a complete change from existing conditions and developed great iron and steel and munition-making industries away from Lake Superior ore regions there is no preparedness program which will insure the billions of capital invested, nor the nation's life itself, should an enemy desire to strike a vital

blow at our country and at all our boasted prosperity.

Not for a moment should anyone imagine that this subject should be considered from any narrow, sectional point of view. But the safety of the nation in the future may some day depend upon the broad development at present of the metallurgical interests of the South. It would be as foolish to wait until war forced upon us the necessity of making an effort to do this as it would be to wait for actual war before beginning to build battleships or the making of an army.

It might, however, properly be borne in mind, as stated by "Pig Iron" Kelly 25 years ago, that "the development of the South means the enrichment of the nation," and only through this development can the broadest national life be achieved either in material things or in a spirit of harmony through mutuality of interests.

The South is the most Anglo-Saxon region of the country, if not of the world, considering the small intermixture of foreign blood with the white blood of the South. On this account, and by reason of its negro population, which for many lines of work is a possession of importance, this section is free from some of the many dangers which have harassed iron and steel works in the East and West, especially since the war, threatened as many of these plants have been by the danger of hostility of foreign employees.

The South has about three-fifths of the coast line of continental United States.

It produces the entire cotton crop of the country, as essential in time of war as in time of peace to the nation's prosperity and life.

It is already producing more than one-fourth of the nation's grain crop.

It produces three-fourths of the sulphur of the world, as essential in time of war as in peace.

It has about three-fourths of the coking coal supply of the United States.

It has about one-half the standing timber of the United States.

It is the center of oil and gas producing activities.

It has almost limitless water-powers.

It produces practically all of the phosphate rock mined in the United States and a very large proportion of the total output of the world.

Its resources cover the widest variety of soils, of minerals, of timbers and of climate. Its development, commensurate with its resources, would mean an enormous expansion of the progress and wealth of the nation, and the South holds the only possible insurance policy which can be issued to protect the nation from destruction in time of war. It holds in its hands in these vast resources a policy which if accepted by the iron and steel men and the financiers of the country, as well as by the National Government, would make preparedness a reality.

Without this insurance policy all of the effort at preparedness based on existing iron and steel conditions is but an impossible, unrealizable dream. So long as present conditions are permitted to last we are living in a fool's paradise, regardless of all efforts we may make to build a navy or establish an army.

RICHARD H. EDMONDS,

Editor Manufacturers Record.

Baltimore, Md., May 25.

## Petroleum as Locomotive Fuel.

Figures just made public by the United States Geological Survey disclose a marked increase in the use of petroleum as a locomotive fuel by the railroads of the United States in 1915. The data at hand show that the quantity of oil fuel so consumed last year was 36,648,400 barrels, an increase of 5,555,200 barrels, or 18 per cent., over the similar consumption in 1914. This increase is ascribed to the relatively low prices prevailing for fuel grades of oil during the last year and a half as a result of the increased production of low-grade crude in the Gulf Coast States and in Mexico and of the augmented output of suitable residuals from refineries operating in ever-increasing number in Oklahoma and Kansas.

The total distance covered by oil-burning locomotives in 1915 was 124,255,525 miles, and the average distance covered per barrel of oil fuel consumed was 3.39 miles. Oil fuel is now used to some extent on 40 railroads in the United States, having tracks in 21 States.

## Co-operation and Efficiency in Developing Our Foreign Trade\*

We in this country can learn many things from the organization and efficiency of the iron and steel industry in the great industrial countries of Europe which will assist us in developing foreign trade. In Europe the iron and steel industry illustrates the effectiveness of co-operation, first between business men, second between business men and government.

Only within comparatively recent years and since the introduction of foreign capital has industrial organization in the form of cartels and syndicates developed in Italy. Among the better organized industries is that of iron and steel. In April, 1911, the six leading Italian iron and steel manufacturers combined and formed a syndicate known as the "Ferro et Acciaio" (iron and steel). The syndicate agreement was made for 12 years, and the Ilva company, located at Genoa, was named to act as the common selling agency until December 31, 1922. The companies in this syndicate represented a total capital of \$26,800,000.

The French iron and steel industry is one of the most highly organized industries in France. Of the various syndicates of iron and steel producers in France, the Comptoir de Longwy is the largest and best organized. It combines 18 important firms. In 1909 its syndicate contract was extended for 20 years. Each month it fixes the prices of coke and raw iron. It produces about seven-tenths of the annual production of pig-iron in France. In the interests of foreign trade it has established a special export organization, which handles exclusively all the export business of its members.

Nearly all of the leading Belgian industries are exporting industries, and long ago pooled their forces and combined for the purpose of promoting their export trade. The steel manufacturers have a syndicate which is organized along the same line as the steel syndicate of Germany, with which it has an agreement concerning Class "A" products. It sells its products exclusively through a common selling agency located at Brussels. About three-fourths of its products are exported. In practically every branch of the Belgian iron and steel industry there are smaller cartels and syndicates through which the manufacturers work jointly for their common interest. It is said that the success of Belgium export trade is in a large measure due to organization and co-operation among industrial producers.

A well-known English economist in a recent discussion of organization and combinations among British iron and steel producers said: "In all the recent amalgamations the main desire has been to increase the power of resisting American competition, and the opportunity has been taken of raising fresh capital from the public for the purpose of extending works and modernizing plants."

Although there is a tendency among British iron and steel manufacturers toward merging small with large concerns (as in the case of Bolckow, Vaughan & Co., Guest, Keen & Nettlefolds, Vickers' Sons and Maxim, Sir W. Armstrong and Maitworth & Co.), numerous combinations and trade associations also exist for controlling prices and production and combating foreign competition.

Among the larger combinations of steel producers are the Scotch Steelmakers' Association and the North of England makers. Both of these divide territory and fix prices. Other similar organizations are the National Galvanized Steelmakers' Association, the Tinplate Bar Combine, the South Wales Siemens Steelmakers' Association. The manufacturers of galvanized plates, which constitute one of the chief items of English steel exports, are also organized. As illustrative of the extent to which the British iron and steel trade has been syndicated, I may mention the fact that the greater part of the annual output of ship and boiler plates, galvanized plates, tinplate bars and rails, amounting to about 3,000,000 to 3,500,000 tons, is controlled by combinations of manufacturers.

The German steel industry has few, if any, equals in effective organization. It offers a typical example of how efficient industrial organization and co-operation, assisted by government, may succeed in building up a

large national industry shipping its products to all parts of the world.

The German Steel Syndicate ("Stahlwerksverband") comprises 31 leading steel concerns, including the well-known Krupp company. It controls about 90 per cent. of Germany's total steel production. In 1913 its production amounted to 6,339,000 tons.

In the production and distribution of Class "A" products (half products, railway line material and bar iron) the syndicate has an almost absolute monopoly; in the case of Class "B" products it controls the production but not the distribution. It has standardized the Class "A" products and maintains a large technical bureau for testing the products of its members, and, if possible, to increase uniformity and to improve quality.

The syndicate maintains close relations with dealers' associations, and has been instrumental in the formation of a number of them. It has also organized its wholesale dealers in foreign countries.

The total volume of business controlled by the syndicate amounts to more than a billion marks per year. Its expenses of distribution and administration have been reduced materially, so that it now averages only 7 cents per ton of crude steel.

All orders placed with the syndicate are distributed among its members according to their shares of participation, but due consideration is given to the geographical location of the plant desired by the customer.

The control or common selling agency of the syndicate is located in Dusseldorf. In connection with it a special clearing-house for the export trade is maintained. In order to promote and regulate systematically the export trade and to equalize some disadvantages under which the German export industry is said to be placed, the syndicate, through the Dusseldorf office, computes, regulates and pays export bounties, which have averaged from 10 to 15 marks per ton of steel half-products during the past 10 years. In this way it expended from 1904 to 1908 a total of 17,000,000 marks.

Business men, economists and statesmen of the leading commercial nations of Europe practically agree that where industries are efficiently managed and under proper governmental regulation the cartel and syndicate have proven their desirability from an economic point of view and have enabled these nations to hold a dominant position in the world's markets. German and French writers point with pride to the success achieved by their respective iron and steel syndicates, and the present German Minister of Finance, Dr. Holferrich, stated a short while ago that the cartel organization has been the acme of German industrial enterprise during the past 25 years.

European iron and steel producers have repeatedly called attention to the fact that their system of co-operation has enabled them to prevent or at least tide over periods of business depression and industrial crisis.

Official Government investigations in several European countries make it clear that cartels have succeeded in reducing both the cost of production and the selling expenses, which permits the consumer to purchase the finished product at a lower figure. In the case of the French Comptoir de Longwy co-operation in selling has reduced selling expenses 3 to 4 cents per ton. It is maintained that the cartel organization also enables manufacturers to equalize supply and demand, to adapt their prices to demand, and to regulate the prices of their products in accordance with the cost of raw materials.

In a report to the Chamberlain Tariff Commission of England Mr. J. Stephan Jeans, secretary of the British Iron Trade Association, said: "All other things being approximately equal, the country that produces the cheapest pig-iron should in the long run be the master of the iron-trade situation." It is my belief that if the cost sheets of the iron and steel industries in the countries which have been mentioned were compared with those of the United States, the comparison would show that pig-iron is produced in this country as cheap as in any country of the world. I believe that not merely in natural resources, but in management and organization, the American iron and steel industry is in a position to meet the severest competition of its foreign competitors,

and in the end to conquer the iron and steel markets of the world.

Has our Government done its part? I doubt whether the European iron and steel industries could have achieved success in foreign markets without the active assistance of their governments.

A wrong feeling has existed in this country as to the proper relations between Government and business. Co-operation requires the interest and good-will of both sides. Business men are anxious to co-operate with our Government. It is now the duty of the Government to lend its active constructive aid, and it is the earnest desire of the Federal Trade Commission to do everything in its power to help foster American industries.

The Federal Trade Commission is endeavoring today to work out a comprehensive, constructive solution of our business problems. We have taken definite steps toward getting at the real facts of industry from manufacturers. Within a few months we hope to be able to give manufacturers first-hand information about their business.

It is a fact well understood among business men that the general demoralization in a large number of industries has been caused by firms who cut prices, not knowing what their goods actually cost to manufacture. The cost of selling also, which is equally important, is almost wholly lost sight of.

Since better business methods usually begin with better methods of cost accounting, scientific cost keeping becomes in a very definite sense the basis of our prosperity. The Government, through the Federal Trade Commission, by recommending the subject of costs to the business men of the country at this time, and offering to aid in the actual development of proper cost systems, is endeavoring to do a constructive piece of work which is of the greatest importance. The problem of credit and finance, of foreign trade and unfair methods of competition, and of labor and capital—all will begin to solve themselves once the subject of costs receives on every hand the attention it rightly deserves.

The present European war has given us an unprecedented opportunity for developing our export trade. When peace is again restored we will, for a while at least, be the leading export nation of the world. Whether we retain this supremacy will depend largely upon the efficiency of our merchandising and industrial organization and the co-operation of our Government with business. These opportunities for trade exist in Latin America, in the Orient, in Russia and elsewhere. Let me particularly mention the opportunities to be found in Russia. Russia exports hides and skins, carpet wools, vegetable fiber, and makes a specialty of exporting flax, furs and licorice root. At the present time our leading exports to Russia are agricultural implements, raw cotton, machinery, locomotives, cars and copper.

The present war and many reforms, such as the abolition of the sale of vodka, have proven of great financial benefit to the Russian people as a whole, of which there are 170,000,000. Even a slight increase in the consuming power of this large population will mean in the aggregate a vast increase in trade opportunities.

Before the war 30 per cent. of the products purchased by Russia from the United States and 20 per cent. of the products purchased by the United States from Russia were handled through German commission houses in Berlin. We now have an opportunity to increase our trade. Buying and selling direct with Russia will save commissions, reduce the costs and bring the business men of Russia and the United States in closer contact. American business has no greater trade opportunity today than the one presented by the Russian Empire.

Nowhere is co-operation among business men and between them and government more essential than in the development of our foreign trade. The success of our European competitors is evidence enough of this. We have reached the point where under normal conditions we must have foreign markets for our surplus manufactured products. The American people, including every day laborer, every clerk, every mechanic, every farmer and every business man, large and small, is heartily in favor of Congress removing the doubt which now exists in the interpretation of the anti-trust laws when applied to organizations co-operating to further our export trade. Such relief will make it possible for us to obtain our share of foreign business, so that our factories may run continuously and keep our workmen permanently employed.

If our business men are to be factors in the world's

\*Synopsis of address by Edward N. Hurley, vice-chairman Federal Trade Commission, before the American Iron and Steel Institute at New York, May 26, 1916.



markets they must receive encouragement to do as our foreign rivals are doing, and the Federal Trade Commission has recommended to Congress that a bill be passed giving the American manufacturer the legal right to form co-operating selling agency in export trade.

The Federal Trade Commission does not believe that Congress intended by the anti-trust laws to prevent Americans from co-operating in export trade for the purpose of competing effectively with foreigners, where such co-operation does not restrain trade within the United States and where no attempt is made to hinder American competitors from securing their due share of the trade. In view of the conviction that co-operation should be encouraged in export trade among competitors as well as non-competitors, the Commission recommended the enactment of declaratory and permissive legislation to remove this doubt.

We feel that we would fail of our duty if we did not urge the pressing need of such action immediately. If American business men are to make the most of the great opportunities now before them, are to build securely in foreign trade, and are to avoid disaster in the shock of the stern and determined competition that will doubtless follow the war, they must at once perfect the organization demanded by the conditions of international trade.

Competition in foreign markets is national. Foreign countries, such as England, Germany and France, present in markets like those of Latin America a united front. One does not hear of the competition of individual concerns, but, for example, of German competition and English competition. Each country pools its governmental and commercial forces and goes forward into foreign markets in a united effort to capture those markets against the business forces of other countries. Competition from our foreign rivals must, therefore, be met by bringing together in a co-operative way our national forces—governmental, industrial, financial and commercial. American manufacturers must cease to think selfishly or even provincially; they must think nationally and internationally. If we are to be factors in the world's markets our vision must be broadened; we must cease to think merely of local conditions. United then, in the spirit of co-operation and with the support of our Government, there is every reason to believe that we will succeed against all comers in the great markets of the world.

**ACTIVITY IN CRUDE BARYTES INDUSTRY**

**One Hundred Per Cent. Increase of Production in 1915.**

The production of crude barytes in the United States in 1915 was 108,547 short tons, valued at \$381,032. As compared with the production in 1914, which was 52,747 short tons, valued at \$155,647, this is a remarkable showing, and reports collected by James M. Hill of the United States Geological Survey indicate that the production in 1915 will be continued if not exceeded in 1916.

The following table shows the source of the increased production:

	1914.		1915.	
	Quantity (short tons).	Value.	Quantity (short tons).	Value.
Georgia	33,317	\$112,231	39,113	\$158,557
Kentucky	10,113	16,273	25,074	71,390
Missouri	9,317	27,143	5,589	19,793
Tennessee	52,747	155,647	108,547	381,032
Other States				

Alaska shipped its first barytes in 1915, and it is reported that a grinding mill will be in operation at Sulzer some time in 1916. Deposits have been developed in Colorado, but none of the product was marketed in 1915. The Kentucky mines, which have been practically idle for a number of years, made a considerable production in 1915. Georgia and Tennessee mines made remarkable gains in output, through the operations of old producers and newly opened properties. Most of the mines in the Eastern States, even though they marketed no barytes in 1915, report development work and the prospect of large production in 1916. Missouri, which up to the present has always been the largest producer of crude barytes, made an increase in 1915 of over 6000 tons.

The general feeling of the trade is that this boom is not to be short-lived, particularly in view of the large demand for crude barytes by the newly established barium chemical industry.

**ALABAMA COAL FOR THE UNITED STATES NAVY.**

**Government Recognition Given for the First Time—Shipments to Foreign Countries Made.**

Birmingham, May 27.—[Special.]—On competitive bidding of Alabama operators, the Government on the 26th awarded contracts as follows: To the Tennessee Company, to supply the naval coal yards at New Orleans; to the De Bardeleben Coal Co., to supply coal for Government vessels at New Orleans; to the Pratt Consolidated, to furnish coal for yards and ships at Pensacola. The tonnage is considerable, but the achievement is in securing the recognition of Alabama coal by naval officials. Upon analysis made several years ago the Alabama coals proved "superior" to the Ohio, Illinois and Western Pennsylvania coals, and "ranked with the best Virginia and West Virginia" coals, but lack of proper pressure made the findings an academic matter. This spring Congressman Oliver of the Tuscaloosa district secured an order for submission of Alabama coals for further tests by the navy. Congressman Huddleston of the Birmingham district also got behind the movement. The Imperial Coal Co., Birmingham, filled the bunkers of the Flusher and other naval vessels at New Orleans with testing coal.

Subsequently bids were offered, and now, for the first time, Alabama coal is formally recognized by the navy. The mines from which the coal will be obtained are in the Warrior basin, close to the Warrior River, and the coal may be shipped either by rail or water.

For the first time in a series of years the Southern Pacific Railroad has entered Alabama for a coal supply, having placed an order for 175,000 tons, covering a period of two years, with the Birmingham Fuel, delivery to be at the rate of 7500 tons in New Orleans. For several years the Southern Pacific either used oil-burning engines or got its coal elsewhere. This road has also during the year purchased 46,000 tons of Ensley steel rails.

A cargo of Alabama coal left Pensacola a few days ago for use of the Italian Government.

The Pratt Consolidated Company has shipped several hundred tons of Newcastle coke to Chile.

**Progress Made in Rebuilding Burnt District in Paris.**

Paris, Tex., May 26.—[Special.]—In the 60 days that have elapsed since the fire that destroyed a great part of the city of Paris considerable progress has been made in the work of rebuilding. Permits issued for structures of all classes total nearly \$750,000, and many more will be asked for as soon as the architects complete the plans.

Under the ordinance regulating building an inspector was provided and the Mayor appointed to that position W. W. Whipkey, who has been inspector of public buildings for the State of Texas.

The city engineer has established building lines on all streets, the distance from the property line being 15 to 25 feet, according to the character of the street. Streets that are marked for future widening have the building line set further back, so that there will be the least trouble and expense when the time comes for the widening.

R. G. Tyler, who has been city engineer for the past two years, has tendered his resignation to accept a chair in the University of Texas at Austin. He will be adjunct professor of highway and sanitary engineering, the position having been recently created. Mr. Tyler has prepared the plans for the sewage-disposal plant that is required by the State to be in operation by February 1, 1917, and will return here in the late summer to supervise the construction of the system. The activated sludge method will be used, and the installation is estimated to cost \$10,000, funds for which have been provided by bond issue, as heretofore reported. J. B. Early, assistant city engineer, will have charge of the office pending the date of Mr. Tyler's resignation, which will be after the sewer work is completed.

The City Council has ordered an election to determine whether \$60,000 bonds shall be issued for the rebuilding of the high school. There is \$40,000 already available from bonds voted early in April for a new grammar school, and the insurance on the burned high school will make the total \$150,000, which amount will be put into a high school, the school board and citizens being practically unanimous in the belief that near future needs will require such a building. Commission to prepare the plans has been given to Barry & Smith of Paris, associated with Sanguinet & Staats of Fort Worth, and work will begin as soon as the plans may be completed and contract let.

Three of the principal streets have been widened 10 feet in the business section, giving a width of 70 feet between property lines. Many streets in the residence sections that do not run through the city are being opened, and others are projected.

The city is full of mechanics and building contractors and salesmen or agents for building materials and specialties. The five lumber yards that were located here before the fire have been increased to twenty-one, and brick are being hauled in by carloads. Much of the business house construction will be of reinforced concrete, but most of the residences are being rebuilt of wood, with fireproof roofs. A deal of the residence construction already done is in the negro quarter, and there is a gratifying improvement in the character and appearance of the buildings there.

The county (Lamar) has let contract for the taking down of the walls of the granite courthouse, and has commissioned architects to prepare plans for a courthouse on modern lines that will also contain the jail and all county offices.

**Production of Phosphate Rock in 1915.**

The phosphate rock sold in the United States in 1915, as shown by figures compiled by the United States Geological Survey, amounted to 1,835,667 long tons, valued at \$5,413,449. This is a decrease of 898,376 long tons in quantity and of \$4,194,592 in value, according to W. C. Phalen of the Survey, as compared with the production of 1914, which, in turn, showed a marked decrease compared with that of 1913. The output came, as usual, principally from Florida, Tennessee and South Carolina, but there was a small output from Arkansas, Idaho, Utah and Wyoming.

The quantity of phosphate rock marketed in Florida in 1915, including hard rock and land pebble, was only 1,358,611 long tons, valued at \$3,762,239. Compared with 1914, this was a decrease of 780,280 long tons in quantity and of \$3,592,505 in value. The hard-rock industry especially is in a badly-crippled condition, owing to the war in Europe.

The production of phosphate rock in Tennessee, together with a very small production in Arkansas, in 1915 was 389,759 long tons, valued at \$1,327,747. Compared with 1914, this was a decrease of 93,444 long tons in quantity and \$495,023 in value.

The production of phosphate rock in South Carolina in 1915, which was 83,460 long tons, valued at \$310,850, also greatly decreased, as compared with that of 1914. The production in Idaho, Utah and Wyoming in 1915 was 3837 long tons, valued at \$12,613.

Conditions in the phosphate-rock industry during 1915, especially in Florida, were about the same as they were at the end of 1914.

Soon after the outbreak of the European war the phosphate-mining companies of Florida—not only the companies that produce the higher-grade rock for export, but also those that supply the domestic trade—either curtailed production very materially or suspended mining. The companies engaged in a combined export and domestic trade or in domestic trade alone were less seriously affected than those doing an exclusive export business.

Shipments of phosphate rock to Germany, which hitherto has been a large consumer, have, of course, almost entirely ceased, and those to the other European countries have been seriously interrupted.

The great demand for sulphuric acid, especially toward the end of 1915, has also curtailed the production of phosphate rock. The prices of sulphuric acid have been so high that the manufacture of acid phosphate has been somewhat reduced and the reduction has caused a decline in the market for phosphate rock.

## Tobacco Industry of Winston-Salem Puts North Carolina City Ahead of All

REMARKABLE ADVANCE THAT HAS TAKEN PLACE IN RECENT YEARS—ONE WEEK'S REVENUE RECEIPTS PAY FOR \$250,000 FEDERAL BUILDING—  
UNIQUE FEATURES OF THE GREAT REYNOLDS PLANT.

By ROY G. BOOKER.

Winston-Salem, N. C., May 26.

Winston-Salem manufactures more tobacco (all tobacco products are taken into this statement) than any other city on earth, little or big. Industrially, she is easily first in North Carolina; popula-

Fifth North Carolina district (Winston-Salem), \$7,844,331.43, or more than 40 per cent. greater than St. Louis.

Until recently St. Louis led all cities as a tobacco manufacturing center. The forward thrust of Win-

they become available the figures for the fiscal year ending June 30, 1916, will show Winston-Salem's lead to be nothing short of amazing.

In this connection note that last week the tobacco manufacturers of Winston-Salem paid the United States Government \$271,253.27, through its local internal revenue office, for revenue stamps, and for the fiscal year ending June 30, 1915, the receipts collected from the local manufacturers of tobacco totaled \$7,123,278.78, or an approximate weekly average of \$136,000. Compared with last week's receipts, the average weekly receipts during the fiscal year ending June 30 of last year were about half the amount of the latest weekly figures. These figure facts eloquently show the tremendous increase that has been made here during the last year in the manufacture of tobacco.

Much ado was made over the fact, right after the new postoffice and federal building was completed here



PLANT OF THE R. J. REYNOLDS TOBACCO CO., WINSTON-SALEM, N. C.

The small factory in the right-hand corner of the picture has expanded into the enormous plant represented in the great group of buildings, typical of the industrial progress which the South has made in recent years.

tion considered, first in America and I believe in the world; socially, a never-failing delight to her friends.—Extract from an address delivered by Col. A. D. Watts, Collector of Internal Revenue for the Fifth District of North Carolina, at a smoker given by the Ticin City Club, Winston-Salem, February 4, 1916.

For the fiscal year ending June 30, 1915, the total collections on tobacco for the First Missouri district (St. Louis) were \$5,579,252.94; for the

Winston-Salem is therefore seen to be in the nature of phenomenal.

For the year 1914 the United States Census showed that the cities of St. Louis and Winston-Salem—the two leading tobacco manufacturing centers of the world—had from their combined tobacco manufacturers an output valued, respectively, at \$32,207,893 and \$32,273,966. From these figures it will be seen that Winston-Salem led St. Louis by \$66,073 in 1914. When

at a cost of \$250,000, about a year ago, that the receipts within eight business days after it was occupied amounted to the cost of the building. Now the building pays for itself—often more—every six-day week through its internal revenue collections.

Another factor that points to Winston-Salem's growing importance as a tobacco manufacturing center is the fact that it has been designated as a port of entry and a deputy collector of customs has been appointed



PANORAMIC VIEW OF WINSTON-SALEM, N. C.

Wachovia Bank & Trust Co. building at extreme right beyond County Courthouse. Beginning with the smokestack, just at the left of County Courthouse tower and reading to the left, are various units of the R. J. Reynolds Tobacco Co. plant, with several showing in the center foreground. The large new concrete factory building of the Reynolds Company is indicated by the construction tower in the near background just to the left of water tower over the Camel cigarette building.



and is now in charge. This means that the duty on imported materials, particularly sugar, licorice and imported tobaccos, which are used in large quantities by the local tobacco manufacturers, may be collected by the local customs officer. The goods will be shipped here and stored in a bonded warehouse, which the R. J. Reynolds Tobacco Co. has made available for that purpose. And while it was mainly through the efforts of the Reynolds organization that a port of entry is being made of Winston-Salem, Mr. Reynolds advises that the other firms of the city may have their imported supplies stored in the building and they will be charged only a nominal rental.

The advantages of Winston-Salem becoming a port of entry is apparent. Costly delays at the seaports will be obviated; the customs collections will augment the local receipts and another important branch of Government business will be added to the city.

Winston-Salem, according to a neat little folder issued by Secretary J. L. Ludlow of the Board of Trade, styles itself "the city of diversified industry." Briefly, the value of its annual total factory output is \$45,000,000; the investments in its factories total \$30,000,000 and has an annual payroll of \$6,000,000. Approximately \$20,000,000 of this capital was added between the years of 1900 to 1915. According to the United States Census, the increase of factory products from 1900 to 1910 was 243.2 per cent., and the estimated increase from that time to 1915 was 130 per cent. As about three-fourths of the value of the annual output of all the local factories is represented by tobacco products, I am devoting this article mainly to Winston-Salem's chief industry—tobacco manufacturing.

There are six tobacco manufacturing companies in Winston-Salem, and between them they manufacture the tobacco leaf into cigarettes, smoking tobacco, chewing tobacco (plug and twist), and snuff. Located as it is in the heart of the Piedmont tobacco belt of North Carolina and drawing on the markets of Virginia and Kentucky besides, Winston-Salem enjoys not only a large business in the manufacturing line, but there are four loose-leaf tobacco warehouses which sell for the farmers in the surrounding country their tobacco across their floors direct to the buyers of both the local and foreign concerns. According to G. E. Webb, secretary and treasurer of the Tobacco Association of the United States, approximately 27,000,000 pounds of loose-leaf tobacco, valued at \$4,500,000, was sold in the local warehouses last year.

Ask any citizen of Winston-Salem what is the most important and the largest industry in the city, and he will at once point with pride to the gigantic plant of the R. J. Reynolds Tobacco Co., which manufactures tobacco products that are advertised—thus incidentally advertising Winston-Salem—and sold in every city and hamlet in this country and in all parts of the world. It has been stated authoritatively that about one-third of the population of this city is dependent upon the Reynolds organization for a living. The bigness of the Reynolds interests here having swept some newspaper writers off their feet, apparently, Mr. R. J. Reynolds had this suggestion to make:

"In writing about the R. J. Reynolds Tobacco Co. there is no reason for printing anything other than facts. We have been embarrassed on several occasions by newspapers misprinting what was given out to them

correctly. We feel that facts, and facts alone, about our plant will make just as interesting a story as the air castles which some newspaper men seem prone to build after they leave our office."

I quite agree with Mr. Reynolds that the facts are impressive enough.

As in every enterprise, the R. J. Reynolds Tobacco Co., in all its bigness and power in the tobacco manufacturing line, reflects a personality. R. J. Reynolds, the founder and the "personality," from the beginning to the present day, is just what you might expect the captain of a great industry to be—a big, powerful man physically, with an alert mind, a keen appreciation of the possibilities in any situation, energy that never ceases or tires, and the faculty of inspiring men to co-operate in carrying out his plans. He is democratic in his ideas and manner, and having been a farmer boy and an employee in his father's tobacco factory, he appreciates and looks after the welfare of his employees, the man at the bottom as well as the top; thus, he has no labor troubles. He has the loyal co-operation of

factured tobacco products. This partnership existed for 12 months, at which time Mr. Reynolds bought the interest of Judge Lybrook, paying him the principal and 25 per cent. on the original capital he invested, and ran the business as an individual until 1888, when the R. J. Reynolds Tobacco Co. was formed by Mr. Reynolds and his employees, with Mr. Reynolds as president. He has kept that title and remained as the active main-spring of the organization ever since. Today the R. J. Reynolds Tobacco Co. has an authorized capitalization of \$20,000,000 and a large surplus; its local system of factories comprises a group of great buildings used for manufacturing, storing and redrying. In other tobacco buying centers it operates 12 redrying plants and 37 warehouses. It employs 10,000 people, several hundred of whom are traveling representatives scattered from coast to coast. A large distributing organization is maintained in San Francisco, with warehouses, etc., to take care of the selling and distributing business of the Far West. On account of its national advertising campaign there is hardly a person in the



THE R. J. REYNOLDS & CO.'S NEW FACTORY BUILDING OF CONCRETE CONSTRUCTION UNDER WAY IN CENTER OF WINSTON-SALEM, N. C.

every member of his vast organization, and always he insists that the success of the business is due in large part to the efforts of those associated with him.

After having sold tobacco manufactured by his father, located on the family plantation, in Patrick county, Virginia, from a wagon which he drove all over this part of the country, R. J. Reynolds came to Winston-Salem in 1875 with \$7500 cash capital. At this time he built the first plant, which, when equipped, cost only \$2400, leaving a working capital of \$5100. His brother-in-law, Judge A. M. Lybrook of Stuart, Patrick county, Virginia, was his silent partner. The name of the firm at that time was R. J. Reynolds & Co. During the first year the plant produced 150,000 pounds of manu-

country that does not know of the "R. J. R." company and its products.

An interesting index to the growth of the company is found in the building program that the Reynolds company has maintained for the past three years, during which time the volume of business has grown so great that the greatest building expansion in the history of the firm has been made necessary. Since 1913 up to the present date the steady building era has been as follows:

In 1914 a five-story reinforced concrete building 90x273 feet was constructed; in 1914 a reinforced concrete building, six stories, 90x238 feet; in 1915 a building of structural steel, with terra-cotta and brick walls, 11



TOP OF EIGHT-STORY OFFICE BUILDING.

The City Hall is indicated by the clock tower. Left of center in the near foreground is shown the top of the new United States Postoffice and Custom-house, recently completed at a cost of \$250,000. This will be identified by the Ionic columns in the front of the building. To the extreme left of middle foreground the Gorrell and Piedmont warehouses for the sale of loose-leaf tobacco are shown.

stories, and with reinforced concrete floors. At the present time there is under construction in the heart of the city a six-story reinforced concrete building. Since 1913 there have also been erected four tobacco warehouse sheds. Three of them, which were of structural steel, were all one story high, and their respective dimensions were 80x290, 100x234 and 147x290. The fourth was two stories in height, 176x254 feet, and the first floor was of reinforced concrete and the upper floor of structural steel.

Work is to begin at once on another building. It will be located at the corner of Sycamore and Fifth streets, five stories high, constructed of reinforced concrete, the flat slab system, with columns 22 feet each way, and each floor designed to carry 300 pounds per square foot, which is said to be double the strength usually required for buildings of this class. Large glass areas have been provided in the side walls, with windows extending up against the flat ceiling, thus insuring maximum light and ventilation. There will be 150,000 square feet of floor space in the building. Details regarding this building are given so that a clear idea of the construction of the four preceding concrete buildings can be had, as they are all of about the same class of construction.

When shown over the main buildings of the Reynolds plant I was particularly interested in the welfare arrangements for the employees. There are four lunch-rooms, and approximately 2000 employees take lunch in them daily. They are served every day with a good, wholesome lunch, for which they pay 10 cents or less. I can testify as to the excellence of these lunches, both as to quality and quantity. Of course, it is only possible to serve such lunches as these through wholesale buying and selling at absolute cost.

Another Reynolds welfare innovation is that each office employe is allowed 28 fourth of a day holidays a year to attend the ball games, amounting to a week in the aggregate, and in addition the office force and traveling force is given liberal vacations. During June, July and August on Saturdays the offices close at noon. With this "give-and-take" policy since the company was

bears his name. Mr. Bohannon employs about 300 people in five buildings. He manufactures high-grade chewing tobacco to the extent of about 1,000,000 pounds per year, which sells at 50 cents a pound and above.

In 1880 the partnership firm of Baily Bros. was established to manufacture plug, twist and smoking tobacco. The firm personnel today is virtually the same, but it now employs about 200 people and does an annual business of \$330,000 and over.

Taylor Bros. produce annually between \$400,000 and \$500,000 worth of manufactured tobacco products. They employ 300 people, and the plant is composed of two manufacturing buildings and three warehouses.

While the tobacco industry is the conspicuous development in Winston-Salem, and is clearly responsible for the extent of the community's recent growth, there are, both in Winston and the older settlement of Salem, a number of very successful and long-established industries which of themselves would be sufficient to support a populous and prosperous city. Among the notable industries of Winston are the Shamrock Hosiery Mills, whose products are sold all over the country, and the P. H. Hanes Knitting Co., manufacturer of men's heavy-weight cotton underwear. This is the largest business of its kind in the world. They do both a national and an international business. The wagons made at a suburb of Salem have been famous for their excellence since colonial times. There are old-established cotton and woolen mills, furniture manufactories and machine works, etc., and although the activity of the present far outstrips anything known in former years, there never has been a time when the community was otherwise than industrious and prosperous.

Winston-Salem is a well-built, up-to-date and wide-awake commercial and industrial center. It is a substantial city, and in the atmosphere and fiber of its social being there is evident the incalculable advantage of foundations laid through the Moravian settlement of Salem nearly two centuries ago. Salem gave stability to the newer town of Winston in its formative period, and has exerted a mellowing influence at all times.



COLLEGE GROUNDS, MORAVIAN CHURCH AND MAIN BUILDING OF SALEM ACADEMY AND COLLEGE, WINSTON-SALEM, N. C.

organized, it is of little wonder that the Reynolds company enjoys such co-operation from its employees.

The Brown & Williamson Tobacco Co. is the second largest tobacco company in the city. It manufactures chewing and smoking tobacco and snuff. It employs about 500 people; the value of its annual output is \$1,500,000. It occupies three buildings, and is capitalized at \$100,000. F. H. Fries is the president of the company, and W. R. Leak, the secretary.

With 150 employees producing chewing tobacco to the extent of a yearly output of \$250,000, the J. G. Flynt Tobacco Co. is an important part of the local industry. The company is capitalized at \$83,200.

F. M. Bohannon is the active head of a concern that

A striking background to the modern business progress of the community is found in the historic school architecture and grounds of Salem College, founded 114 years ago, and in continuous operation ever since. Twenty thousand Southern young women have received college training here. Amongst them names specially revered are those of Mrs. Stonewall Jackson and Mrs. President James K. Polk.

Portions of the quaint tile-roofed buildings date back to 1785. There is shown the stone-covered excavation beneath an arched cellarway where the jewelry and other precious belongings of Southern girls were hid while Stoneman's Brigade passed through the community during the Civil War.

Few more striking transitions are possible anywhere than to pass through the ancient oak-floored halls and low-arched, quaint doorways and out upon broad verandas and into the spacious modern buildings of recent erection.

A strange charm of simplicity and a studious atmosphere pervades this classic college, and it is no wonder that each year sees the gathering together of several hundred young college women from all over the South, students in some cases representing the fifth generation of Salem College alumnae.

The musical atmosphere of Salem reminds the visitor of European centers of culture, and, as Dr. Lyman Abbott said, there is an historic charm here and beauty of college architecture making this center more like the classic halls of Oxford or Cambridge than any spot in all the Eastern States.

Twelve buildings complete the present group, and, as is the case in the great English universities, enclose an inner quadrangle walled with ancient ivies and leading in turn to many acres of forest park.

### Southern Industrial Activities.

During May the Construction Department of the MANUFACTURERS RECORD published 5243 items regarding industrial developments, railroad, financial and building operations, and general business interests of the South and Southwest. Within the preceding four months of the year 20,289 of these briefly-descriptive statements had been published by the department. The total number for the five months thus amounts to 25,532.

Items for the preceding months were previously detailed. Those for May are given in the following table:

Industrial and Developmental.	
Bridges, Culverts, Viaducts.....	80
Canning and Packing Plants.....	34
Clayworking Plants.....	14
Coal Mines and Coke Ovens.....	21
Concrete and Cement Plants.....	11
Cotton Compresses and Gins.....	23
Cottonseed-oil Mills.....	13
Drainage Systems.....	12
Electric Plants.....	12
Fertilizer Factories.....	11
Flour, Feed and Meal Mills.....	5
Foundry and Machine Plants.....	41
Gas and Oil Enterprises.....	141
Hydro-electric Plants.....	11
Ice and Cold-storage Plants.....	22
Iron and Steel Plants.....	11
Irrigation Systems.....	41
Land Developments.....	41
Lumber Manufacturing.....	71
Metal-working Plants.....	91
Mining.....	91
Miscellaneous Construction.....	121
Miscellaneous Enterprises.....	121
Miscellaneous Factories.....	100
Motors and Garages.....	6
Railway Shops, Terminals, Roundhouses, etc.....	254
Road and Street Work.....	14
Sewer Construction.....	14
Telephone Systems.....	4
Textile Mills.....	108
Water-works.....	27
Woodworking Plants.....	27
Buildings.	
Apartment-houses.....	111
Association and Fraternal.....	10
Bank and Office.....	10
Churches.....	172
City and County.....	9
Courthouses.....	24
Dwellings.....	270
Government and State.....	28
Hospitals, Sanitariums, etc.....	40
Hotels.....	51
Miscellaneous.....	10
Railway Stations, Sheds, etc.....	22
Schools.....	230
Stores.....	100
Theaters.....	11
Warehouses.....	41
Railroad Construction.	
Railways.....	91
Street Railways.....	11
Financial.	
Corporations.....	71
New Securities.....	514
Fire Damage, etc.....	4,542
Machinery, Proposals and Supplies Wanted.....	181
Total.....	5,243
Previously detailed since January 1.....	20,289
Total for five months.....	25,532

### Seminole Mill Contracts Awarded.

All contracts have been awarded for the Seminole Cotton Mills Co., Gastonia, N. C., recently announced as organized, etc. The building will be of mill construction, 317x125 feet, and the machinery will include 10,000 spindles, with electric power drive.

ment of question affecting business matters. Vice-Chairman Hurley of the Federal Trade Commission made an illuminating address as to reasons why the Government should co-operate with the business people of this country in favoring combinations for the development of the National Government through the National Trade Commission, is interested in building up instead of tearing down.

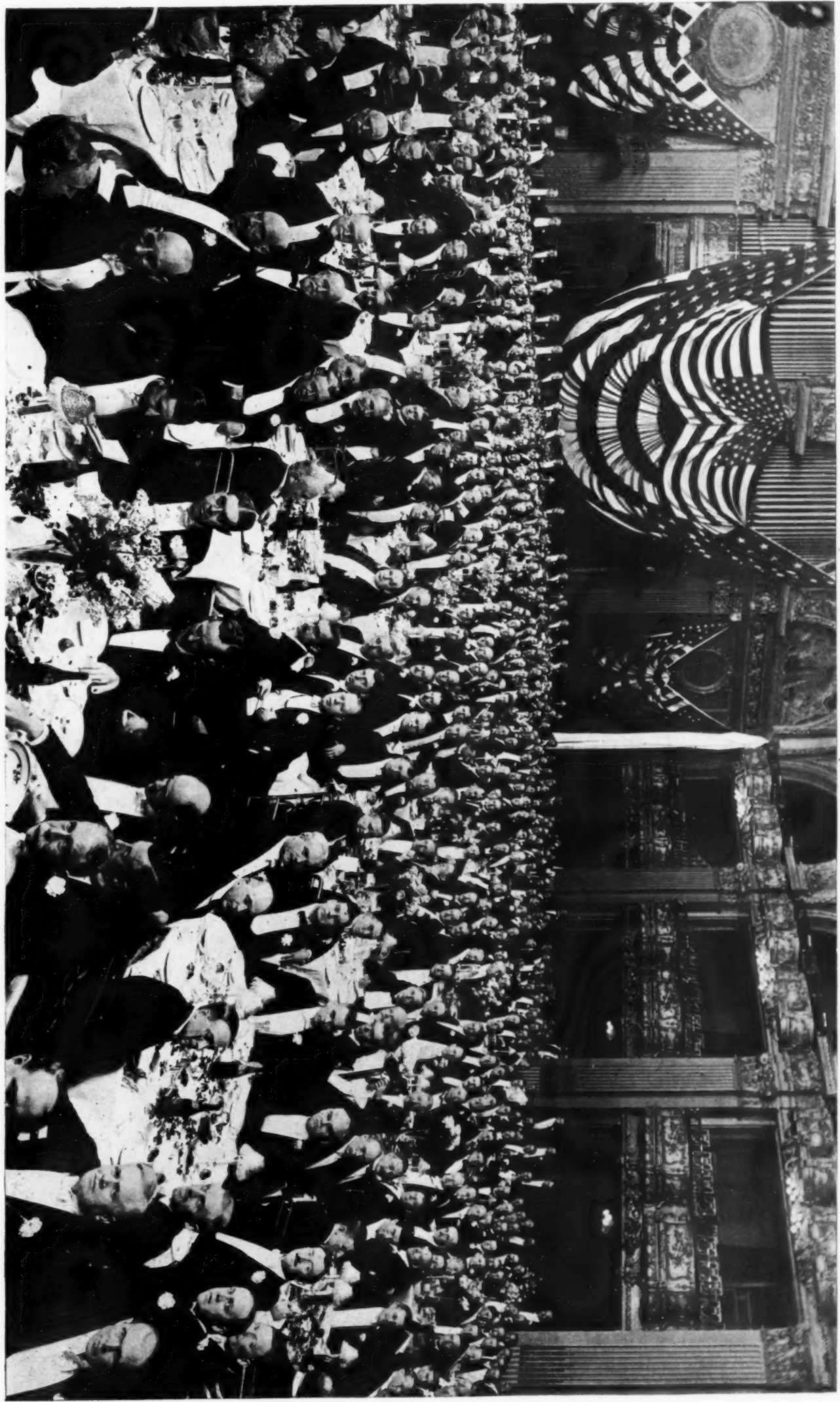


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Throughout all the speeches at the meeting of the American Iron and Steel Institute in New York last Friday there was a note of optimism and enthusiasm as to business conditions and to the better understanding of the Government of questions affecting business matters.

Vice-Chairman Hurley of the Federal Trade Commission made an illuminating address as to reasons why the Government should co-operate with the business people of this country in favoring combinations for the development of export trade. Mr. Hurley discussed the methods adopted in various foreign countries for handling the foreign trade through combinations of industries, and pointed out that similar conditions must prevail in this country if we are to take our rightful place in the world's commerce and find a market for the surplus output of our factories. His address was in line with many statements that he has made elsewhere on the same subject. It indicated that the National Government, through the Federal Trade Commission, is interested in building up instead of tearing down, in constructive work rather than in destructive activities.

BANQUET OF AMERICAN IRON AND STEEL INSTITUTE.



## First Electric Furnace Installed at Plant of Hess Steel Corporation

INTERESTING ROLLING MILL EQUIPMENT AND OTHER FEATURES OF ONE  
OF BALTIMORE'S NEW INDUSTRIES.

The Hess Steel Corporation of Baltimore, Md., an outgrowth of the Hess Steel Co. of Bridgeton, N. J., and organized for the purpose of producing high-grade electric furnace ingots, billets and bars, has just put in operation its first Heroult electric furnace of six-ton capacity. Operations are under way for the in-

The power available is the 3-phase, 25-cycle, 13,200 volts, and is supplied by the Consolidated Gas, Electric Light & Power Co., Baltimore.

The motor for the 20-inch mill is connected to the mill proper by means of a single reduction gear drive, the gears having herring-bone cut teeth and being to-

The motor for driving the 9-inch mill is connected to the mill proper by means of a two-speed special gear drive, each of which consists of two sets of cut herring-bone gears and pinions of different ratios. The gears are keyed fast on the main driving shafts, while the pinions run loose on the motor shaft. The motor shaft also has keyed to it a sliding crab clutch, which can be thrown in either direction, thus engaging either of the pinions and acting as a driving member. With this arrangement it is possible with a single motor to obtain either 260 R. P. M. or 140 R. P. M. on the mill as desired. A force speed oil pump is provided to furnish oil under pressure to point of contact of the gear teeth, this being necessary on account of the high peripheral speed.

Both mills are fixed middle line type, and are provided with bottom screw adjustment, which operates by means of a wrench through the gearing below the housings. The adjustment of the top bearing on the middle roll is made by means of wedges, which engage against lugs extended within the housing window. A special feature of the mill is that wedges have also been provided between the top and bottom bearings to prevent pressure and friction on the neck of this middle roll. Another special feature is that the top roll is counterbalanced, steelyard rods having been provided within the body of the housings. The roll carriers also extend into the body of the housings in such a manner as to be carried by steelyard rods. By its use roll changes can be quickly made, and very rapid roll adjustment is possible.

As a "Safety First" precaution, both mills have been provided with throw-out crab clutches, which have been designed for use with magnets on the same electric circuit as the mill motor.

"Emergency push-buttons" have also been provided at each stand for quick motor stoppage, and it is later intended to connect the magnets to these buttons, so that when an emergency button is pressed the current is cut off the motor and at the same time the mill is disconnected by the operation of the crab clutch, thereby bringing the mill to an immediate standstill.

The 20-inch mill is equipped with an electrically-driven traveling table with live rollers arranged to take a billet or finished bar from any pass on the mill and transfer same to the saw or shear table.



ELECTRIC FURNACE AND ROLLER MILL BUILDINGS OF THE HESS STEEL CORPORATION.

stallation of a duplicate furnace, expected in the early part of July.

The corporation has 12 acres of land on the main line of the Pennsylvania Railroad, and has erected buildings covering approximately five acres, structural steel for which was furnished by Dietrich Bros., Pleasant and Davis streets, Baltimore. These consist of a brick and galvanized-iron construction furnace building of sufficient size to conveniently house the two furnaces and provide ample space for pouring, etc., and the overhead 10-ton Niles crane, manufactured by the Niles-Bement-Pond Company, New York, and for the efficient handling of material in this building.

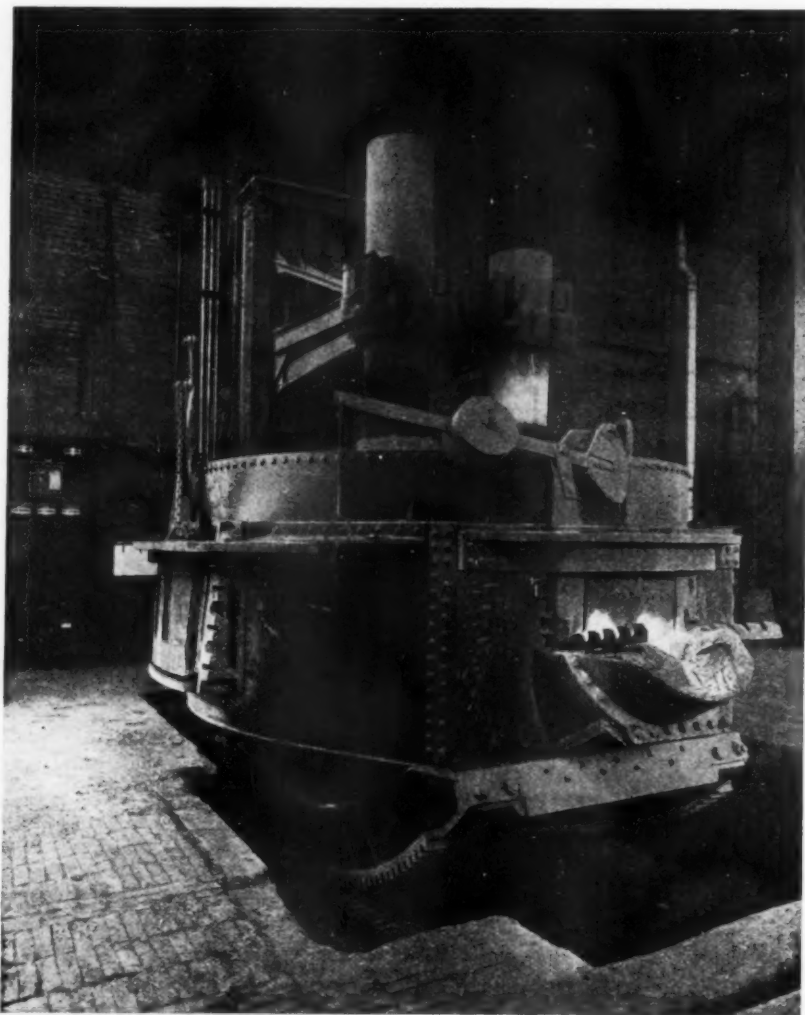
The mill building, which is roughly 150x190 feet, provides space for a 20-inch mill and a 9-inch mill; each are now partially assembled.

In addition to these two buildings are an office and annealing building, a chemical laboratory, storerooms, etc.

The rolling mill equipment was furnished by the Philadelphia Roll & Machine Co., and consists of three-stand 20-inch mill and a five-stand 9-inch mill, both of which are electrically driven. The electrical apparatus is being built and furnished by the Westinghouse Electric & Manufacturing Co., consisting of a 600-horse-power motor for the 20-inch mill and a 400-horse-power motor for the 9-inch mill. These motors are wound for 25-cycle, 440-volt, 3-phase current, and are of the two-bearing pedestal type, arranged with extra heavy bedplates, along which the complete stators may be moved, thereby facilitating repairs. The insulation of these machines is such that a plugging stop and reversal can be accomplished without danger of breakdown.

For the control of each motor there is provided a primary panel, containing the necessary indicating and recording instruments, and primary oil switches for forward and reverse operation. These switches are mechanically interlocked against simultaneous closing. The starting and switch regulation is accomplished by means of Westinghouse liquid type regulators, which can be adjusted to various rolling conditions, so that no excessive overloads or peaks come back into the generating and distributing systems.

tally encased and running in oil. Cast steel flywheels of the disc type are mounted on the motor shaft extension of this drive, these flywheels being 6 feet in diameter and of sufficient weight to take care of all abnormal peak loads.



6-TON HEROULT FURNACE IN OPERATION BY THE HESS STEEL CORPORATION.



# Casinghead Gasoline Manufacture Extensively Undertaken in Oklahoma

IMPORTANT INTERESTS ATTRACTED TO THE INDUSTRY, IN VIEW OF PRESENT SITUATION IN GASOLINE MARKET.

[Special Correspondence Manufacturers Record.]

Shamrock, Okla., May 27.

The manufacture of casinghead gas gasoline, described always as the most profitable and least risky industry of the many allied with petroleum production, is rapidly gaining in favor among both oil producers and refinery owners, and the greatest increase in the business is in progress at the present time, particularly in Oklahoma. In this connection it is interesting to note that Oklahoma led all other States, even in 1914, in the manufacture of this gasoline, when it produced a total of 17,277,555 gallons, a very substantial increase over 1913, when the total amount manufactured was only 6,462,968 gallons, showing an increase for 1914 of 167 per cent. No figures for 1915 have as yet been announced by the United States Geological Survey.

It was with the view of getting into casinghead gasoline manufacturing in this State, it is said, that Martin Daly, perhaps the best-known gas man in America, visited the Oklahoma fields about two months ago. Mr. Daly is the head of the Ohio Fuel Supply Co., with headquarters in Cleveland, and he visited the various Oklahoma fields in company with A. J. Diescher, the general manager of the Wichita Natural Gas Co. They visited the Blackwell, Cushing and Shamrock fields in particular, where the gas production is the heaviest; and as a result of this visit it is said that several additional gasoline plants are to be placed.

It is estimated that each 1000 cubic feet of natural gas will yield more than two gallons of the casinghead gasoline, and the extraction of this by-product does not injure the gas to any noticeable extent for fuel purposes. The gasoline is simply the "wetness" in the gas. Oklahoma is credited with producing 151,500 cubic feet of new gas during the month of April, or enough to manufacture at least 303,000 gallons of gasoline, worth at the wholesale price of 20 cents a gallon \$60,600, yet but a very small per cent. of this new gas was utilized in this manner. The casinghead gasoline manufactured in 1914 in this State ran 3.1 gallons to each 1000 cubic feet of natural gas.

The United States Geological Survey estimated that the casinghead gasoline manufactured in 1914 had a value of \$1,113,059, whereas the gas itself had a value of \$273,940. The amount of the gasoline was 411,000 barrels. To manufacture this same amount of gasoline from crude oil through refineries would call for 2,500,000 barrels of crude.

The amount of new gas uncovered in Oklahoma during 1915 was 1,735,100,000 cubic feet. At 3.1 gallons to each 1000 cubic feet, which was the number of gallons obtained in 1914, this new gas alone would have yielded 5,378,810 gallons of casinghead gasoline, worth at the lowest estimate over a half million dollars.

The total amount of gas produced in Oklahoma in 1915 was 80,000,000,000 cubic feet. These figures are obtained by adding the 1915 new development to the total produced in 1914. At 3.1 gallons to the 1000 cubic feet, this would have made 248,000,000 gallons of highest-grade gasoline, and it would not have injured the fuel value of the natural gas. The gasoline thus manufactured would have been worth at the lowest estimate \$25,000,000. And yet but a very small amount of it was utilized in that manner.

In a recent article it was shown that for 10 days recently in the Shamrock field alone there was a daily waste of 180,000,000 cubic feet of gas. In 10 days' time the amount of gasoline this waste would have made, on the basis of 3.1 gallons to the 1000 cubic feet (the amount obtained in 1914), would have been 5,580,000 gallons worth \$1,116,000. Even at one gallon to each 1000 cubic feet, the 10 days' waste would have made 1,800,000 gallons, worth \$360,000.

When these figures are realized by oil men generally there is no wonder that the casinghead gasoline business is attracting the widest attention, and that it is looked upon as one of the surest methods of solving the present gasoline situation. There is no wonder that the Federal Government is using every means to enforce

the conservation of natural gas. It is understood that an oil lease may be equipped with a casinghead gasoline plant for from \$6000 to \$8000, a plant that soon pays for itself and the product of which soon becomes "all velvet."

In this connection it has developed recently that the Federal Government has served notice on oil-producing companies operating on Indian lands that the flow-tank gas must be taken care of and conserved. In the Tucker sand pool, in the center of the Cushing field, it is said that the waste of flow-tank gas has been very great, and that because of this the Government has called several of the principal companies on the carpet and given them notice that his gas must be conserved, or the companies will be penalized. At a result it is understood that the companies have acquiesced, but have asked for additional time in which to secure the necessary machinery with which to conserve the gas. This gas makes the richest of casinghead gasoline.

There are several casinghead gasoline plants building in the Shamrock field at the present time, including a 3000-gallon plant on the Hill Oil & Gas Co. leases, a 2500-gallon plant by the Eastern Gasoline Co. on the Eastern Oil Co.'s leases and a 3000-gallon plant on the McNac lease of the Southwest Oil Co. This is being installed by the Western Gasoline Co.

Joe Abraham and associates are putting in a \$10,000 gasoline plant at Bristow, the Oklahoma Natural Gas Co. has recently completed a plant near Sapulpa, and the Boynton Gasoline Co., composed of Tulsa parties, is putting in a plant in the Boynton field. Grant Brown and Slaughter Brothers are installing a plant at Wainwright, and Sam Travis of Tulsa and Louis Bendit of Kansas City are building an extensive plant in the Alluwe field. They expect the plant to cost \$125,000.

The largest gasoline plant in the State is that of the Gypsy Oil Co. near Kiefer, while the second largest is the Crosbie plant in the Glenn Pool.

## Situation in the Metal Markets at Birmingham

Birmingham, Ala., May 27.—[Special.]—For the first time since the year began, the iron manufacturers of the Birmingham district failed to sell their month's make. Against this, however, they have order books for second half well covered, and there is no cause for anxiety until the last half opens up and begins to disclose what it has in prospect. Spot at \$15 is undoubtedly strong. Forward iron at \$15.50 does not show the same all-around vigor. This is in part due to the entrance of the Woodstock furnace, which is to resume on July 1 with \$15 iron for the rest of the year. Operators of that plant are quoted as saying that its forward offerings would be limited. It is customary for long idle plants, which have been overhauled at large expense, to get into the market with less painstaking care as to prices than others with well-filled order-books. Birmingham district operators are selling spot at \$15, and some forward at \$15.50, including 1917 delivery. They disclaim intention of following the example of Woodstock.

Increasing iron output from now on may be scheduled as follows: Vanderbilt stack of the Woodwards resumes June 10, and a larger stack goes out, in addition to which the largest one, of 400 tons capacity, stock and Sloss-Sheffield's idle city stack resumes July 1. The Sloss-Sheffield's new Sheffield stack will come in a month or so later, along with that of the Alabama company at Gadsden. When the new Sheffield stack comes in, the other will go out. The net foundry iron increase after July 1, therefore, will be one stack, and after August or September one more stack. Basic output will be increased 400 tons per diem on orders already booked.

The firmness of spot, with the slight wavering of forward prices, predicates the possibility of a uniform

basis. Thus far the leading interest and other producers of the Birmingham district quote firmly for last half and 1917 at \$15.50. By July 1 a big buying movement, or the absence of one, will either establish forward metal at \$15.50 or \$15. The Woodstock matter does not determine the market of itself. The old material market has further softened, owing to the large stocks on hand. The market is inactive, except for old steel axles, which are cut into billets and bring high prices.

The water pipe market has been quiet, but operations remain at a high level. It is believed that much Latin-American business will be obtained during the latter half of the year, owing to the increasing number of vessels that have been purchased and are being fitted out by independent Birmingham and Mobile owners for Gulf and Latin-American trade. English pipe makers secured some large business at Buenos Aires over more attractive Birmingham prices because England could guarantee delivery and Birmingham could not.

## FIG-IRON.

No. 1 foundry.....	\$15 50 to \$16 00
No. 2 foundry.....	15 00 to 15 50
No. 3 foundry.....	14 50 to 15 00
No. 4 foundry.....	14 25 to 14 75
Gray forge .....	14 00 to 14 50
Basic .....	15 00 to 15 50
Charcoal .....	22 00 to 22 50

## OLD MATERIAL.

Old steel axles.....	\$20 00 to \$21 00
Old steel rails.....	12 00 to 12 50
No. 1 steel scrap.....	10 50 to 11 00
No. 1 wrought scrap.....	14 00 to 14 50
No. 1 cast scrap.....	11 00 to 11 50
Extra heavy cast scrap.....	9 50 to 10 00
Stove plate and light cast.....	10 00 to 10 50
Old car wheels.....	12 50 to 13 00
Tram car wheels.....	10 50 to 11 00

## Control of Baltimore Dry Docks & Shipbuilding Co. Bought by Milwaukee Interests.

The controlling interest of the Baltimore Dry Docks & Shipbuilding Co., previously held by the Baltimore Trust Co., has been sold by that company to Milwaukee interests represented by George P. Miller of Milwaukee. About \$828,000 was involved in the deal. Preferred and common stock brought \$101 a share on a par value of \$100. The 7 per cent. dividend payable on the preferred is to be retained by the seller, and the 3 per cent. dividend on the common goes to the purchaser. The yard at Locust Point has work in hand or contracted for sufficient to keep it busy two years.

In the contract of sale a provision was inserted that within a reasonable time limit the purchaser will buy all minority stock offered on the same basis as that paid for the control. The Dry Docks Company is now employing about 1800 men, and, in addition to other work, is building or has under contract seven steamships for Norwegian shipowners.

## Pertinent Suggestions by the Greenville Chamber of Commerce.

Under the title of "The Periscope of Greenville's Preparedness Campaign," the Chamber of Commerce has issued a circular in which it asks the citizens of Greenville to consider some business opportunities, as cited in the following:

With its textile mills making shirt materials, would not a good shirt factory be profitable, as approximately 150,000 shirts are sold annually in Greenville, and of the State's consumption with Greenville as a distribution center?

Why not establish a knitting mill, using local yarns to furnish the 645,000 pairs of hose annually shipped to Greenville?

Would not a modern packing plant with necessary storage facilities to supply the enormous amount of meat used in that section and thus enhance the market value of cattle and hog output of the farmer, be a good investment?

Other factories that could be established to the benefit of the community would be one for making candy, to take care of the 100,000 pounds sold into Greenville annually; a chair and furniture factory and operate in connection therewith a trunk and box factory; a brick plant to supply material for the many new buildings being erected at all times, an overall factory, and so on.

These suggestions, together with others of vital interest to the welfare of Greenville, are brought to the attention of the business men of that place, and will be discussed at the board of directors' meeting of the Chamber of Commerce on Thursday.

# News and Views from Our Readers

## Marketing Bureau Established by Roanoke Chamber of Commerce.

J. FRANK FOOSHE, Market Agent Roanoke Chamber of Commerce, Roanoke, Va.

The Roanoke Chamber of Commerce has recently established a marketing bureau and has employed a market agent for his whole time to help the farmers in grading, packing and selling their produce. His work is based on the principle that reducing waste through better grading, packing and handling is the only way to bridge the chasm between more to the producer and less to the consumer.

This is, so far as is known here, the first effort on the part of any city or other organization to apply the principles of farm demonstration, which have been such a powerful factor in the advancement of the agricultural interests of the South, to the selling as well as to the growing of farm produce. The establishment of this farm bureau as a permanent feature of the Chamber of Commerce is the result of a month's demonstration on this market last summer.

Within the first month there have come illustrations of how varied are the calls on such a bureau. Some of these verge right on to the manufacturing side. For instance, within the past week there has come a call from a party for information in regard to the establishment of a plant for putting up some canned meat specialties, including tripe. In connection with such a plant this party would figure on putting up some vegetable specialties. The opportunities of this section for something of this kind are great.

Then some others are making inquiry in regard to the establishment of a plant for the utilization of waste fruits and vegetables, a regular by-product plant of orchard and garden. Such a plant would have no trouble in getting an abundant supply of fruits and vegetables throughout the season. There is a growing conviction on the part of the growers that they must make larger use of their waste in order to get more satisfactory prices for their better grades. It is only a question of time till this demand will ripen into a manufacturing plant that will take care of all these culls and low grades.

We shall be glad to hear from manufacturers or others who are in position to give needed information in regard to either one of the above plants.

## Unjustifiable Discrimination Against Native Building Stone South.

W. F. SHAFFNER, Winston-Salem, N. C.

I have read with much interest the article in your issue of May 11, entitled "Granite Industry of Mt. Airy Meeting a Nation-Wide Demand," and your editorial on the subject entitled "South Should Use More Southern Stone." For myself and in behalf of the North Carolina Granite Corporation, I desire to thank you for these very fair and able articles on an industry which, I think, deserves more public recognition than it has heretofore received.

I was particularly struck with your editorial and the point you make about public buildings being constructed in the South out of foreign stones. On several occasions we have made protest to the Federal authorities about this, contending that it is unjust discrimination, and we have been answered that the departments have made a ruling that granite should be used only in postoffices and public buildings of the first class, the effect of which ruling is practically to eliminate granite from Government buildings. A few years ago all Government buildings contained more or less granite, and Mt. Airy did quite a business in what was termed then postoffice work.

I do not make any insinuations as to the why or wherefore of such ruling, but it seems peculiar that our Government should insist on importing stone from other States into North Carolina and other Southern States when a better local material is available, and when the people in certain instances have expressed their preference for granite by petition and when, as in the case of Wilmington, N. C., which you cite, the

appropriation for the building was largely in excess of the bids, and much more than sufficient to pay the additional cost of granite. Our Senators and Representatives advise us that they are unable to do anything in this matter, as the department will not hear to changing this ruling.

I am writing this letter to you as additional information on this subject, and because of the intelligent way in which you have handled the subject in your last issue. If the MANUFACTURERS RECORD can assist us in any way to correct a ruling which appears to be unjust, not only we, but the granite industry all over the country, would be very appreciative.

## Many Valuable Mineral Deposits in South Appalachian Range.

WM. MCGOVERN, Geologist, Bristol, Tenn.

Noticing an article in the MANUFACTURERS RECORD of recent date from V. A. Smith of North Carolina relative to the mineral resources of this section, I wish to add that investigations lately made have disclosed the existence of fairly rich deposits of copper ores in considerable quantities in many places along the Blue Ridge Mountains of North Carolina and Virginia which are analyzing a much higher average grade than the ores at present being mined for making copper throughout the West, and will no doubt command attention in the near future, as I believe they should.

Attention is also at this time being directed to the numerous locations along the Valley of the Holston and Tennessee rivers between Bristol and Knoxville, Tenn., at which deposits of zinc are being found, many of which will no doubt prove to be valuable when more fully exploited. The very many places at which zinc is found cropping in the district named would seem to indicate the presence of some really valuable deposits of zinc ore.

There is also in the mountain districts of North Carolina a mineral little known at present, but which may become a pronounced factor in the world of commerce in the near future. I refer to the uranium minerals or ores of radio-activity. During my earlier investigations I looked upon these minerals as producing little more than samples in quantity, but I am now convinced that they do exist in considerable amount for an ore of that character and rarity. The three forms in which these uranium ores occur are as uraninite, thorogummite and semarskite, running from 40 to 80 per cent. uranium content and with high emanating activity.

These are the ores from which radium is extracted, but only long, tedious and very careful chemical processes with these ores are able to procure it at present, and then only in small quantities. If ever radium and radio-activity play their part in the world of commerce and science, as many now believe, there are at least two localities in North Carolina that I believe will become of very great interest.

There are also other uses for uranium ores, and the sections referred to might merit a more extended investigation.

## Industrial Activities at St. Joseph, Mo.

H. E. MOOERS, Industrial Commissioner, St. Joseph, Mo.

Accurate figures show that our manufacturing establishments produced last year an output valued at \$86,501,014; capital employed in manufacturing alone, \$20,048,689; wages earned, \$6,615,219; bank transactions from January 1 to July 1, 1915, \$1,029,578,238.28.

The local packing plants handle annually livestock valued at over \$66,000,000, representing more packing-house products than the balance of Missouri combined, including St. Louis. These plants give employment to 3412 men and youths and 167 women. Candy factories and confectioneries produce commodities worth \$2,756,895; men's clothing manufacturers, \$2,182,471; foundries and machine shops, \$2,862,176; creameries, \$1,524,217.

St. Joseph is in the midst of a rich and productive

grain belt, \$8,000,000 of wheat, corn and oats being marketed here last year. This is but a beginning, however, as new elevators are now being projected to add to the present capacity, which will soon bring the storage capacity to over 1,000,000 bushels, and yet more are needed, as all storage is now full and overflowing.

## Working for Industries at Basic City.

C. M. FABER, Secretary Basic City Board of Trade, Basic, Va.

The Basic City Board of Trade is promoting and soliciting subscriptions to the capital stock of the Home Products Co., to be located in Basic, for the purpose of manufacturing overalls, shirts, cloth gloves or other kindred articles, with a minimum capital of \$2500, maximum \$10,000.

The officers have not as yet been selected for the permanent organization. Any communications in regard to machinery and equipment addressed to me will have the proper attention. However, we are not ready as yet to purchase machinery, etc., but would be very glad to have communications from the manufacturers of such equipment regarding prices.

We consider this a good location for such an enterprise, having the best of distributing facilities and numbers of girls who have no employment.

It is not likely that a new building will be erected until the business becomes established.

We might consider combining our capital with some similar enterprise having equipment and experience in the manufacture of such articles, who wants an ideal location for such an industry.

We want good industries to locate at Basic, and will do all we can to encourage such.

## Lee County Organized to Get Industries.

C. E. COUK, Cashier the Powell Valley National Bank, Jonesville, Va.

A citizens' meeting in Jonesville Wednesday resulted in the formation of the Lee County Commercial Association. It is of county-wide membership, with objects to further the development of the natural resources of Lee county and to co-operate with like organizations or other counties and cities of like purpose. Committees were appointed on membership and subscriptions and new industries.

A meeting is to be held shortly to advise on a plan of getting either one of or both the Southern Railway and the Clinchfield Railway to build a branch line of its road into Lee county, Virginia and Harlan county, Kentucky. The proposed road would reach the heart of the iron-ore fields of Lee county. The ores of this field are said to show from 42 to 60 per cent. metallic iron. The road would also tap the Harlan county coal fields at an advantageous point.

The committee on new industries was instructed to get into touch with parties who would locate and establish any of the following plants at suitable points in Lee county: Ice plant, cold-storage plant, slaughterhouse, lumber manufacturing or cooperage factories, cedar chest manufactory, etc. Spears Havelly of Hubbards Springs was appointed chairman of the latter committee. H. E. Gibson was elected president and C. E. Couk secretary. A strong membership of 1000 is aimed at.

## Learn to Shoot Straight!

W. W. HURST, Birmingham, Ala.

A magazine with the words "To the Mother Who Does Not Want Her Son to Be Shot" written on its face in bold, red type brings more prominently than ever to my mind the much-talked-of and written-about issue of preparedness.

No satisfactory answer has ever been made to the question "What causes war?" We all know that war has been a permanent proposition ever since the world began, and we must accept it as one of the evils that torments the race. We do not know why diplomacy



and tact have failed to avert such crises in the past. We must accept the issue and learn how to shoot straight. We have a nation of stoics to some extent. The American generally is noted for his slowness to anger, his willingness to compromise to avert trouble, but this attitude does not and will not count for anything against the iron and steel of a well-armed enemy. A man may stand up and say "Come one, come all; this rock shall fly from its firm base as soon as I," but this declaration will not count for much unless he has about his person something that will speak for him in terms of fire and lead. We all admire a stoic, but even his life may be snatched out by some fanatic who imagines grievous wrongs have been committed against himself.

Therefore, let every man capable of bearing arms in this great country learn to shoot straight. There are wolves and tigers surrounding us. They care nothing for our bark unless it is well backed up by cannon and thunder. If the women of the country do not want their sons shot, they must adopt means of prevention.

### Developments in Southwest Mississippi.

C. P. McPHERSON, Gloster, Miss.

For years the hills of Southwest Mississippi have held millions of feet of long-leaf pine, but owing to the difficulty in getting it to the railroad the manufacture of this timber has been postponed until now. The Foster Creek Lumber & Manufacturing Co. of Milwaukee has taken over these holdings, the officers are here now and will begin work of preparing the site for a sawmill which will employ several thousand men. In addition to the mill, they will establish a 200-acre demonstration farm, and will bring Northern farmers here as fast as the land is cut over.

This enterprise will do more in developing this section than anything of recent happening, as the opportunities of this section are great and each day is showing increased interest in stock raising and general diversification.

The cotton crop of this section is very flattering, but it is not the opinion of any that the farmers here will give up diversification for any one crop system. It is interesting to discuss the experiences of many of our farmers who were broke financially by the invasion of the boll-weevil. Recently a friend of mine (F. H. Wilkinson, Gloster, Miss.) came in my store and told me an experience of getting down to three head of cows and by different reasons losing all of them. But his brother had some fine heifers, and this man had some hogs, so he traded a pig for a calf. This was five years ago, and today, from the offspring of this calf, he has sold \$75 in male calves and has on hand \$300 worth of milk stock. He is operating a dairy, and his cattle are making him a living, and he does not care for cotton or any one-crop system again.

I find it easy to make long-time loans of money now on lands that were once considered worthless.

### Waste vs. Conservation of Wood Products.

CHAS. E. CHIDSEY, Pascagoula, Miss.

A few days ago the writer received from the secretary of a commercial club of one of the most prominent lumber manufacturing centers of Mississippi a booklet which gave some magnificent cuts of the mills in that section. The object in these cuts were the immense "slab burners" connected to each mill, and which by endless chain carries the slabs to the burners, where millions of cords of wood are annually reduced to ashes. While the nation is suffering a potash famine, the rains of heaven fall upon these immense piles of ashes left by the slab burners and wash out their 5 per cent. of potash, which is carried away by the streams and finds its way to the sea. In other words, while one portion of these slabs that might be utilized in making useful articles of commerce goes up in smoke the other portion that would feed a hungry soil is allowed to wash away.

The same day that this booklet was received the writer, in company of Walter G. Wilkes, business manager of the Biloxi Herald, made a visit to the Southern Paper Co. paper mill at Krcola. Here we found large barges on the Escatawpa River unloading with "pire slabs" from the sawmills at Moss Point. These were

taken up on slab conveyors to the mill, where we found two men standing before a "hog" feeding it with pine slabs, which come out of the other end of the mill a high grade of paper, which under present prices commands an average price of \$140 to \$150 a ton. Each cord of these slabs will produce an average of 1000 pounds of wood pulp.

It has already been stated in the MANUFACTURERS RECORD that it was the excessive cost of producing the alkali which prevented this method of making paper being used before. Mr. E. H. Mayo, the manager of the mill, stated that while the alkali formerly cost 50 cents per ounce, it was now made in the mill for about \$3 per ton of paper. "I have only to pull this crank," he said, touching a piece of machinery, "and we can separate the turpentine from the waste that now goes to the river." In reply to our question he stated that the company intended to add a plant to utilize the by-products, but the present market for such things did not justify the expenditure.

In going through the cutting-room we saw that every scrap of paper, it matters not how small, was carefully saved and carried back into the mill to be again made into pulp. This elimination of waste is not the least important lesson to be learned from this plant. The mill now ships on an average of 12 carloads of paper per week.

The writer is frequently asked the question why was this plant located where it is. He has already answered in the columns of the MANUFACTURERS RECORD, "because a paper mill must have an inexhaustible supply of fresh water that is chemically pure, and this is found in the Escatawpa River." United States Coast and Geodetic Survey Chart 189 shows that just above the Alabama & Mississippi Railroad (formerly the Pascagoula, Moss Point & Northern Railroad) the river is 33 feet deep, and the writer has been up the stream 25 miles above the paper mill and put down a pole 20 feet long without finding bottom, and the water the entire length of this river from the Alabama & Mississippi Railroad is as clear as a mountain stream and as pure. The topography of the country is such that should another mill be erected farther upstream than the present one, the waste could be easily conveyed away without polluting the waters of the river.

### Silk Industry to Be Tried Out in Texas.

W. A. ACHILLES, Austin, Tex.

The Austin Silk Plantation & Manufacturing Co., \$12,500 capitalization, was organized in March, 1916, by a number of public-spirited men in Austin for the purpose of trying out the silk industry for this section. The company was chartered to do business on April 19, 1916. The temporary directors were W. A. Achilles, Sam Sparks, T. H. Williams, D. C. Reed and V. K. Osigian. The temporary officers were W. A. Achilles, president; D. C. Reed, vice-president; Sam Sparks, secretary and treasurer, and V. K. Osigian, manager of the silk production.

At a meeting of the stockholders on May 15, at which a majority of the stock was represented, the above directors and officers were made permanent for one year, and Sam Sparks was elected general business manager for the company.

Forty acres of land have been leased. Twelve thousand white Russian mulberry trees, especially adapted to silkworms, have been set out on this land. In addition to these trees, 60,000 cuttings have been set out for the purpose of increasing the stock of trees for 1917. Practically every tree is growing splendidly, and nearly all the cuttings have an excellent start.

### Seeking Capital to Develop Oil in Georgia.

PAUL F. BARRINGER, 420 Mutual Bldg., Richmond, Va.

I am a regular reader of your paper, and have read with a great deal of interest your articles "Do Magnetic Disturbances Indicate Oil in Florida, Alabama and Mississippi?" and "Will Florida Become an Oil Producer?" The question may also be asked as to Georgia becoming an oil producer. The Coffee County Progress, published at Douglas, Ga., prints a statement that a Texas oil man reports that indications are favorable for oil in Jeff Davis county, near Denton, and that a Northern corporation is planning to spend \$50,000 in

an effort to find oil there. Nine years ago my father located oil near Denton, and he interested some drillers, who found oil. Differences arose, and the work stopped. We have renewed our leases, and would like to interest capital to develop the properties.

### Irrigation Plans for Western Texas.

V. L. SULLIVAN, Reeves County Irrigation District No. 1, Balmorhea, Tex.

Balmorhea is located in the western part of Texas, on the eastern slope of the Davis Mountains, partially surrounded by foothills. The Pecos Valley Southern Railroad traverses the entire length of the irrigated district. The Reeves County Irrigation District No. 1 was organized a short time ago for the purpose of purchasing the old irrigation system belonging to the Toyah Valley Irrigation Co., which deal has been completed, and now the district proposes to increase its present water supply through the construction of a storage reservoir and the conservation of the flood waters of Toyah Creek and the winter flow of the large San Solomon Springs. The flow of these springs during the irrigation season has been used for the last 50 years, and fully demonstrates the productiveness of the soil when sufficiently supplied with water. The altitude of Balmorhea is 3200 feet and the climate is ideal both summer and winter. Fruits, vegetables, cereals, alfalfa and stock constitute the principle products of the valley.

### Opportunity for Cannery.

WILLIAM BUCHANAN, Ponchatoula, Tangipahoa Parish, La.

I am a strawberry grower, and I take this method of letting you know something about the greatest strawberry country in the world. We are in need of a cannery, and parties interested are invited to come to this section, where they can see for themselves. The shipments for the season amounted to about 15 cars per day, but there were very poor returns for the farmers, and what they now want is a good first-class cannery. I am no real estate agent, but will answer any letter sent me.

### Mississippi Wants an Iron-Making Plant.

BUCKLEY & BUCKLEY, Meridian, Miss.

Herewith "Brochure" making mention of our iron ore deposits, which cover an area of 10 square miles, according to Dr. E. N. Lowe's estimate, our Mississippi State Geologist.

Enterprise offers superior inducements for the erection of iron-manufacturing industries to any other place in the South.

Will you kindly give us the names of some reliable iron-ore manufacturers over the United States who would likely become interested in our iron proposition at Enterprise, Miss.?

### Want Iron Ore Expert.

BORCHARDT & BORCHARDT, Tampa, Fla.

Will you kindly recommend to us an expert mining engineer who is capable of going over an iron-ore proposition in the mountains of Tennessee, giving us the approximate amount of iron ore that can be mined, the cost of mining and the value of the deposit, etc.?

### Oil and Gas Development in Florida.

The Florida East Coast Oil, Gas & Mineral Co. has been formed at Melbourne, Fla., with L. B. Eschbach, president; F. C. Powell, vice-president; H. R. Belden, secretary; F. L. Bills, treasurer, to develop gas and oil lands said to lie in the vicinity of Melbourne. Mr. Eschbach states that numerous seepages of oil have been found on the 30,000 acres of land leased by the company, and combustible gas has been noticed bubbling up from lakes for as long as five minutes continuously. Prospecting has been made on the ground intermittently for the past several years, and the conviction gained from it that oil and gas are present in large volume, but are probably very deep.

## RICH MINES THE KEY TO VERDUN ATTACK.

### Theory That Germany Is Aiming to Clinch Grip on Alsace-Lorraine Output.

[New York Times.]

The theory was recently advanced in Paris that the Germans were fighting desperately for Verdun in order so to strengthen their grip on Alsace-Lorraine that the rich metal mines in the region back of Verdun never would be in danger, even if the Allies were to break through the German line at another point on the western front.

Support of this theory is found in an article by Otto Hué, a Socialist member of the Reichstag in the Metallarbeiter-Zeitung, the weekly organ of the German Metal Workers' Union. In this the fact is again emphasized that before the war began that region produced about 70 per cent. of the domestic iron ore used in Germany. Since the war began, with the ore imports largely cut off, the dependency of the German steel industry on Alsace-Lorraine is probably greater than ever before. Herr Hué opens his article with a general review of the world's iron production, points out that the annual output of pig-iron in Germany increased from 4,980,000 tons in 1893 to 19,300,000 in 1913, and, referring to Alsace-Lorraine, continues:

"In this country a great ore-mining and iron and steel making industry has developed in a period of time so brief as to remind us of conditions in the United States. In 1872 only twenty mining concessions were granted, the ore output amounted to only 900,000 tons, and the pig-iron production to but 230,000 tons. In 1878-79 along came the process for the extraction of phosphorus, named after its inventor, Thomas and Gilchrist, and already in 1882 there were 230 mining concessions granted in Alsace-Lorraine, and the production of ore soon reached 2,000,000 tons, although the work of smelting at the point of production developed more slowly, because the construction of big smelting plants required more time and money than that necessary for the opening of the mines, the greater part of which was then close to the surface.

"It is sufficiently well known that the Thomas-Gilchrist process raised the Lorraine-Luxemburg iron ore (minette), which contained too much phosphorus for the older Bessemer process, to the rank of a most profitable ore with one blow. This is the base for a development of the mining, iron and steel industry in Alsace-Lorraine unparalleled in Europe. The production of minette ore jumped from 2,150,000 tons in 1885 to 21,130,000 tons in 1913. Of the round 19,000,000 tons of pig-iron smelted within the limits of the German Tariff Union (Germany and Luxemburg) in 1913 some 33 per cent. came from Lorraine and Luxemburg. The outbreak of the war interrupted the increased use of the big new smelters in the Imperial territories—Hagen-dingen, for example. The balance of our production of pig-iron and crude steel began to swing more toward the southwest corner of Germany.

"Of the production of iron ore within the district covered by the tariff union in 1913, which amounted to almost 36,000,000 tons, 21,100,000 came from Lorraine and 7,300,000 from Luxemburg. Therefore, the minette district alone produces 80 per cent. of our domestic output of iron ore. It is true that we exported 2,610,000 tons of iron ore in 1913, nearly all of which went to Belgium and France, but we imported 3,800,000 tons (principally minette) from there in exchange, especially because the mixing of French with German minette makes a better smelting combination. Furthermore, we received 4,550,000 tons of iron ore from Sweden and 3,630,000 tons from Spain, besides smaller quantities from Russia, Algeria, Tunis, Norway, etc.

"In the main, however, these ores, which are generally richer and consequently cost more to extract, go to a few of the big smelters of the Lower Rhine and Westphalia that assured themselves of favorable conditions through long-term contracts, as with Sweden, for instance. Of the some 34,000,000 tons of iron ore worked up in German smelters and foundries in 1913, some 23,250,000 tons came from the interior of the empire, and as of that only about 7,000,000 tons were produced outside of Alsace-Lorraine, a simple calculation shows that already in 1913 some 70 per cent. of the German iron ore used came from Lorraine."

[The MANUFACTURERS RECORD last year stated that Germany's invasion of Belgium was to get control of the iron and steel interests of that country and of the adjacent regions of France, and later we pointed out that the Verdun fight is for control of the iron ores tributary to that section. Germany, in her ruthless disregard of all human rights, in her barbarity and her campaign of murder on the high seas, has been driving for control of vast ore supplies to strengthen her iron and steel interests in her ambition for world dominance. And yet our people refuse to learn the lesson and go on living in a fool's paradise of imaginary safety with our vast iron and steel and munition interests dependent to the extent of 95 per cent. of output on an ore supply that could at any moment be captured or cut off.—Editor MANUFACTURERS RECORD.]

### Production of Wire in 1914 and 1916.

In 1914, 98 wire-drawing establishments in this country produced a total value of wire products of \$172-

600,587, a decrease of 4.2 per cent. compared with the output of \$180,083,522 in 1909. This output included iron and steel wire, copper wire, brass wire and wire of other metals and alloys. The total value of copper wire included in these figures was \$42,928,550, as compared with \$51,288,283 in 1909.

The statistics of wire manufactures, such as nails, rope, fencing, and netting, insulated wire, etc., given in the Census Bulletin, from which these figures are taken, do not cover the total production of such manufactures, but only the output of wire-drawing establishments.

Of the 98 establishments reported in 1914, 17 were located in Pennsylvania, 14 in Connecticut, 11 in Illinois, 11 in New York, 10 in New Jersey, 10 in Ohio, 9 in Massachusetts, 4 in Indiana, 3 in Rhode Island, 2 in Michigan, 2 in Wisconsin, 1 in Colorado, 2 in Alabama and 1 each in Georgia and Kentucky, these figures showing 4 out of 98 for the entire South. Unfortunately, the South has not yet taken up as vigorously as it should do the manufacture of finished goods in iron and steel, as illustrated in this limited number of wire-drawing establishments in this section.

### British Maximum Prices for Iron and Steel.

An interesting report showing the maximum iron and steel prices in Great Britain fixed by the ministry of munitions has been made to the Government by United States Consul-General Skinner of London. He reports that the ministry of munitions, after consultation with the representatives of the principal trade associations, fixed maximum prices for various products until June 30, 1916, and thereafter until further notice. They are as follows for ton net f. o. b. makers' works:

KINDS.		Prices.
Coke.		
Durham :		
Blast furnace coke.....		\$6 81
Special black furnace coke, guaranteed under 0.908 phosphorus .....		7 42
Foundry .....		7 42
South Yorkshire .....		5 84
West Yorkshire .....		5 84
North Staffordshire .....		5 84
North Derbyshire .....		5 84
South Wales : Blast furnace coke.....		7 30
Pig-iron.		
Hematite pig-iron, West Coast :		
Mixed numbers, 1, 2 and 3.....		31 02
Special quality, containing under 0.03 of phosphorus and sulphur .....		32 97
Special quality, containing under 0.02 of phosphorus and sulphur .....		34 06
Hematite pig-iron, East Coast :		
Mixed numbers, 1, 2 and 3.....		29 81
Special quality, containing under 0.03 of phosphorus and sulphur .....		32 97
Special quality, containing under 0.02 of phosphorus and sulphur .....		34 06
Hematite pig-iron, Scotch :		
Mixed numbers, 1, 2 and 3.....		29 81
Special quality, containing under 0.03 of phosphorus and sulphur .....		32 97
Special quality, containing under 0.02 of phosphorus and sulphur .....		34 06
Hematite pig-iron, Welsh :		
Mixed numbers, 1, 2 and 3.....		29 81
Special quality, containing under 0.03 of phosphorus and sulphur .....		32 97
Special quality, containing under 0.02 of phosphorus and sulphur .....		34 06
Lincolnshire pig-iron : Basic or foundry.....		
Cleveland pig-iron : Mixed numbers, 1, 2 and 3.....		21 29
Northamptonshire pig-iron :		20 07
Forge .....		20 07
Foundry numbers .....		20 08
Derbyshire pig-iron :		
Forge .....		20 08
Foundry numbers .....		21 29
North Staffordshire pig-iron :		
Forge .....		21 90
Foundry .....		22 51
Basic .....		23 11
South Staffordshire pig-iron :		
"Part Mine" forge.....		21 90
"Part Mine" foundry.....		22 51
"Common" Staffordshire .....		20 08
"All Mine" forge .....		25 76
"All Mine" foundry.....		27 38
"Warm Air" forge.....		34 05
"Warm Air" foundry.....		36 50
Special quality Lord Dudley's silicon.....		38 32
Cold blast iron.....		43 19
Scotch foundry and forge pig-iron :		
Nos. 3, 4 and lower grades of Monkland, Dalmel- ington, Eglinton and Govan.....		\$27 74
Nos. 3, 4 and lower grades of all other brands.....		28 10

The following are the maximum prices of bar iron, standard quality, ordinary sizes, and merchant's lengths, subject to usual extras for special sizes and

\*No. 1 quality in all cases to be 5s. (\$1.21) per ton above this price.

qualities, per ton f. o. t. makers' works: South Staffs bar iron, \$66.91; marked bars, \$73 less 2½ per cent.; South Yorkshire bar iron, \$66.91; North of England bar iron, \$66.91; Lancashire bar iron, \$66.91; Scotch bar iron, \$66.91.

These prices are not intended to apply to sections rolled by manufacturers who do not make their own steel or puddled bars, but have to purchase blooms, billets or puddled bars from other sources.

The makers may sell for delivery after June 30, 1916, on the understanding that the fixed maximum prices ruling on the first day of any month during the period of the contract will apply to all deliveries made during that month.

These maximum prices are based upon the abnormal costs and conditions now prevailing, and must not be assumed to be indicative of any difference in relative values which may have obtained in the several districts before the war and may obtain again after the war.

### Uniform Boiler Law Gaining Ground.

With an active campaign to be conducted in the June sessions of the Georgia and Louisiana Legislatures for the adoption by those States of the A. S. M. E. boiler code as the legal requirement for steam boiler construction, the weight of the work of the American Uniform Boiler Law Society, Thomas E. Durban, chairman of the Administrative Council, Erie, Pa., is making itself more and more felt. Many of the States or cities with boiler laws accept the code as an alternative for their respective laws, but the society is working to the end that the code be adopted as the legal standard. The code is considered by most authorities as the last word in boiler construction regulation, and its adoption by all States is urged for its benefit to the operators of boilers, the purchasers and owners, and the makers of boilers. Safety is the primary reason for adoption of the code, and efficiency and economy are secondary reasons of no small importance.

It has the official approval of the American Boiler Manufacturers' Association, National Tubular Boiler Manufacturers' Association, Master Boiler Builders' Association, National Association of Thresher Manufacturers, National Electric Light Association, National Boiler and Radiator Manufacturers' Association, National Association of Cotton Manufacturers, Ginners' Association of Texas, locomotive, hoisting engine and steam shovel manufacturers, and all insurance companies that write steam boiler insurance.

Local societies in Tennessee and the Birmingham (Ala.) branch of the A. S. M. E. intend making campaigns in their respective States for the code's adoption. On July 1 the State of Pennsylvania will adopt the code as its official standard, and California will do the same on January 1, 1917.

### The Cotton Movement.

In his report of May 26 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 300 days of the season was 11,616,165 bales, a decrease under the same period last year of 3,255,516 bales. The exports were 4,879,087 bales, a decrease of 2,839,163 bales. The takings were, by Northern spinners, 2,641,539 bales, a decrease of 255,592 bales; by Southern spinners, 3,517,468 bales, an increase of 668,833 bales.

### Asparagus Industry Rapidly Developing in South Carolina.

Johnston, S. C., May 29.—[Special.]—The asparagus growers in Western South Carolina the past season have had an exceptionally good season. It is estimated that the past season will net to the growers in that section an amount approaching \$40,000. Ridge Springs alone shipping some \$25,000 worth to the Northern markets. In and around Trenon the growers seem satisfied, notwithstanding the fact that conditions were not as encouraging as they had hoped, owing to the fact that Western "grass" glutted the Northern market to the exclusion of the Southern product. However, as the season advanced the product found ready sale in the usual points in the North, and under the auspices



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of the South Carolina Asparagus Growers' Association an impetus is being given to the cultivation of this delicacy.

The formation of this association has created a larger interest in the growing of asparagus, and many people of this section who have not heretofore planted asparagus are being shown the successes of those who have made use of it as a farm product, to the end that next year's crop will likely exceed all others heretofore. The adaptability of the soil in Western Carolina to the growing of asparagus is ideal. As the crop takes a year for development, the crops planted this year indicate that next year's output will serve to place more ready money in the asparagus territory than any other farm product, relatively speaking.

It is thought that the South Carolina Asparagus Growers' Association will have a larger membership next year. The secretary and treasurer, who is Joseph W. Jones of Ridge Springs, is busily engaged in sending out literature in regard to South Carolina asparagus to all of the Northern markets, calling attention to its superiority not only in quality, but in the ability of the growers to get it to the market earlier than any other.

### Industrial Development Aided Through Enterprising Electrical Company.

By ALFRED JENKINS, Secretary Chamber of Commerce, Sistersville, W. Va.

"Current for power purposes is one-half cent per kilowatt hour." This was the answer Superintendent A. M. Jones of the Sistersville Electric Light & Power Co. gave me in reply to my question for rates on current.

"At a profit?" I asked.

"Yes," said he. "We can make current at a much lower rate than that."

I decided I would get the basic facts behind an organization that could manufacture and sell electric power at such a price, and here are the actual facts:

Before the year 1897 gas had been discovered near Sistersville and sold for approximately 4 cents per 1000 cubic feet. Obviously, any power plant that expected to compete with natural gas for lighting purposes must meet them on their own ground. That was the problem that confronted the founders of the present Sistersville Electric Light & Power Co.

In the face of such opposition it took a good deal of courage to purchase the first two-cylinder Otto engine, but knowing that no business succeeds without competition, a company was formed with a capitalization of \$13,400. Included in its charter are the names of H. W. McCoy, Sam Messer and E. A. Durham. It was an educational process from beginning to end; the people were at first reluctant to putting in electricity, as gas was so cheap. Opposition in this connection was gradually overcome, however, and in 1898 an additional 13x14 125-horse-power Westinghouse gas engine was added to the equipment; in 1902 a second engine of the same type.

About 1905 natural gas rose slightly in price, and a third Westinghouse engine was of necessity added to the power plant. This was a 14x18 200-horse-power upright type.

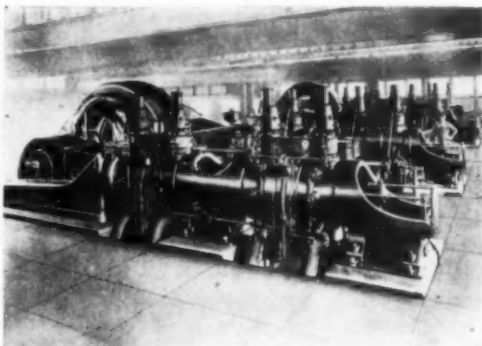
No appreciable progress was made from 1905 to 1909. That year, however, the stockholders of the company interested themselves in the electric line which promoters had laid from New Martinsville to Sistersville, a distance of about 11 miles. New equipment was added to this line, the roadbed improved and regular service established. Within a short time this line was holding its own against railroad competition and entirely successful. The same year the power plant at Paden City (on the road to New Martinsville) was abolished and current for the two places was generated at the Sistersville plant. Next, the name of the line was changed from the Wetzel-Tyler Railroad Co. to the present Union Traction Co., as a branch or subsidiary of the Sistersville Electric Light & Power Co.

The men at the head of the company had also become active in oil activities, and the same year as the purchase of this trolley line the Reno Oil Co. was incorporated, now one of the largest gas and oil companies in West Virginia. This company immediately began to buy up gas and oil territory near Sistersville and to put in its own gas wells. Later it was decided to furnish gas direct to the power company.

Herein, then, lies the answer to successful competition with gas rates—own source of fuel. No matter what rates of outside gas producers might be in the future, by this act the Sistersville Electric Light & Power Co. was made an independent concern.

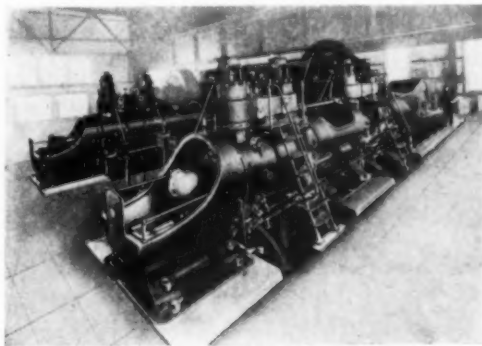
A 19x22 360-horse-power Westinghouse engine was now added to the power-house equipment, for the year 1909 also witnessed another electric line laid from Sistersville to Friendly, a town five miles distant.

In 1911 the Clarksburg Northern Railroad Co. was formed in New Martinsville and track had been laid to Middlebourne, the county-seat of Tyler county. Were this step in the history of the phenomenal growth of the Sistersville Electric Light & Power Co. left out, Sistersville would not be the city it is today, for Middlebourne and the surrounding territory produced for Sistersville much of the trade that had made it a city. Obviously, any road that covered this territory without touching Sistersville would eliminate Sistersville as a city. The problem was put up to the owners of the electric plant and a few outsiders, and at a cost of \$400,000 for 10 miles of track and equipment they put in the Tyler traction line to Middlebourne. Here we have the most remarkable situation probably heard of in the history of electric plants—an electric company saving a city! At a cost of \$40,000 a mile for track and equipment, the stockholders of the Sistersville Electric Light & Power Co. saved the city of Sistersville. Last year they had the satisfaction of seeing the farsightedness of their investment proven, for with the competition of the electric line the Clarksburg Northern



BATTERY OF MESTA GAS ENGINES.

1000 K. V. A. each; Crocker-Wheeler Generators; two-phase, 2400 volts; 60 cycle; operated by two 1000 H. P. twin tandem double-acting Mesta gas engines.



SINGLE UNIT MESTA GAS ENGINE.

1750 K. V. A.; 2400 volts; single phase; 50-cycle Westinghouse generator; operated by 2000 H. P. twin tandem double-acting Mesta gas engine.

Railroad was forced to suspend operations. This electric line will in the future connect Salem, Clarksburg and points toward Fairmount.

Equipment in the power-house was now added as fast as it could be bought and put in. In 1911 the first 1000-horse-power Mesta gas engine was put in; in 1912 the second 1000 horse-power and in 1914 a large 2000-horse-power Mesta.

These last engine investments have been proven likewise in an industrial way. Machine shops and other manufacturers have discarded their own gas engines and put in electric power. Today the equipment and plant of the Sistersville Electric Light & Power Co. is worth at a conservative estimate \$400,000 and is paying well on the investment. Such is the growth of the company which started a few years ago on a \$13,400 capitalization.

Today a trip through the plant is a revelation. Modern in every respect, housed in a well-lighted saw-tooth construction building, and every part of the equipment

the best that can be bought, it is to the city of Sistersville an asset few places can claim. The smooth-running Mestas make no noise, and there is an absence of vibration felt in many power-houses. The current is two phase throughout, and the plant is capable of generating 10,000 horse-power. Electricity is furnished for power and lighting purposes to the cities of Sistersville, New Martinsville and Paden City.

### The Way to Really Do Things.

New York, May 29—[Special].—To the industrial developments already made along the Clinchfield Railroad in Carolina and Tennessee is to be added the establishment of a wood alcohol plant at an estimated cost of \$150,000, with an initial capacity of 40 cords of wood per day. Interests identified with the Federal Dyestuff Company, which is building a plant at Kingsport, will co-operate with the people in the establishment of this new industry, which will take its place in a chain of plants, each one logically, industrially and economically leading up to the other. The Federal dye plant, now under construction, will represent a cash outlay of about \$1,200,000, when the buildings now under way have been completed. It is expected that this plant will be quadrupled in size, the officials feeling justified in undertaking so large an investment as this, believing that they will be able to compete to advantage with the German dye industry.

From the wood alcohol plant there will be turned out products of various kinds representing an aggregate value of about \$16 for each cord of wood consumed.

The establishment of a seven kiln pottery plant at Erwin, Tenn., by the work of the Clinchfield people reported in a recent issue of the MANUFACTURERS RECORD, strikingly emphasizes the opportunities in the South for utilizing Southern raw materials and saving heavy freights. The experts have figured out that in this plant the saving of freight alone will represent more than 25 per cent. of the entire capital stock of the company, all of the materials for the plant being purchased in the vicinity, and heretofore they have been shipped with heavy freight rates to distant points for manufacture.

Along the entire line of the Clinchfield there is increasing industrial activity, and the officials of this company, who have set an example to the whole country in the care with which they have investigated the resources of their territory, are preparing for much broader work in this respect. They are now planning to have a comprehensive investigation made by various experts of all the mineral resources of the territory tributary to their line with a view to making these facts known to the public and securing the building of industries to use these raw materials.

### Asphalt and Concrete Road Suggested for Virginia.

The Barber Asphalt Paving Co.:

Philadelphia, Pa., May 27.

Editor Manufacturers Record:

The condition of the Virginia road between Petersburg and Hopewell, described in your issue of May 18 under the title of "Build for Permanency," recalls the fact that a like situation prevails in Monroe county, Michigan, but is now being remedied in a way that should be instructive to the Virginia taxpayers.

The Michigan county has under construction about 40 miles of roadway, the specifications calling for a five-inch concrete base with six-inch concrete curbs at the sides, the wearing surface to consist of two-inch asphalt macadam. A natural or lake asphalt is specified as the binder for the wearing surface. The concrete will provide an unyielding and permanent foundation and the asphalt macadam a resilient and durable wearing surface suitable for all types of traffic. A feature of this road quite as important as traffic efficiency is its remarkably low cost. The contract was let at a little less than \$12,000 a mile. This economy was effected by combining two of our best road materials—asphalt and cement—so as to permit each to perform the function to which it is best adapted, thereby eliminating many of the structural details that add to the cost of the all-concrete road when built as a separate or distinct type.

D. G. PIERCE,

Executive Assistant.

## RAILROADS

[A complete record of a new railroad building in the South will be found in the Construction Department.]

### VIRGINIAN ORDERS HUGE CARS.

Four Coal Gondolas of 120 Tons Capacity Each to Be Tested Out.

The Virginian Railway is taking a long step forward in car building, the directors having authorized the construction of four gondola type coal cars, each to have a carrying capacity of 120 tons. This is 30 tons, or 250 per cent., greater than the capacity of the 90-ton cars built for the Norfolk & Western Railway, which are at present the largest coal cars in service.

C. W. Hotchkiss, chairman of the board, says that the four cars are being ordered for the purpose of determining by use whether they are of the type which the company should adopt.

One car each will be constructed by the following builders: Pressed Steel Car Co., Pittsburgh; Standard Steel Car Co., Pittsburgh; Cambria Steel & Iron Co., Johnstown, Pa., and Virginia Bridge & Iron Co., Roanoke, Va. They will have six-wheel trucks, automatic train line connectors to empty and load, air brakes and center sill spacing to suit draft gear of manufacturers' designs for excessive shock-absorbing capacity, regardless of Master Car Builders' limitations. Couplers will approximate Master Car Builders, but will be of experimental designs of special mix and heat treated steel, with shanks to suit various draft gears of Miner, Waugh, Westinghouse and probably Sessions patterns. Large draft gears will be used. The Pressed Steel Car Co. will furnish its own design of truck, the Buckeye Steel Castings Co. another, and the American Steel Foundries Co. two types.

The railroad company is considering the possible application of telephones for communication between the locomotive and the caboose as well as from and to intermediate cars, but this is not definite on account of the need to develop the proper apparatus.

The trucks will be of the articulated type. Plans for the cars are now being prepared, and will probably be completed in three weeks, so that construction of the cars is expected to begin toward the latter part of June. The remarkable dimensions of the cars and the necessity of making the draft gear sufficiently strong and efficient to handle the heavy load has naturally developed some special questions in connection with the couplers, the brake rigging and the trucks which are now in course of solution.

It is perhaps needless to state that the new cars will be of all-steel construction. The big coal cars of the Norfolk & Western Railway are commonly known as 100-ton cars, because of the allowance of 10 per cent. for overloading, which is considered in building such cars, hence the new cars for the Virginian Railway might be loaded to carry over 130 tons of coal.

### Carolina Rapid Transit Co.

J. F. Jacobs of Clinton, S. C., chairman of the board of corporators for the projected interurban railway in that section, says that application will be made immediately for a commission to organize and that they have decided to ask for this in the name of the Carolina Rapid Transit Co. Continuing, he writes:

"It is proposed to connect the five termini of Union, Spartanburg, Woodruff, Laurens and Clinton through a central point at Cross Anchor and through Glenn Springs, or by other intermediate routes, as may be found most feasible. This will be about 80 miles; the population served about 100,000.

"The line will traverse approximately one-third of the territory of the three counties (Spartanburg, Laurens and Union), the population of which is now upwards of 150,000. The principal centers of all three are reached. It is planned to build a road of high-class construction, heavy rails, easy grades and easy curves, to run fast express trains, and also to operate freight trains and to carry express and mail matter.

"This line opens up a new section of country not now provided with railroad facilities, except at the termini, where there are 13 railroad division connections,

including the Atlantic Coast Line, the Seaboard Air Line and the Southern Railway; also the great coal road, the Carolina, Clinchfield & Ohio and the interurban Piedmont & Northern. The densely settled region is covered. Probably one-fourth of the textile development of South Carolina is within the territory reached. Nearly \$12,000 has been prescribed for the preliminary surveys."

Mr. Jacobs further said that the survey contracts were to be let May 30 at Laurens, although announcement of the award has not yet been made.

### What the Railroads Are Earning.

The Bureau of Railway Economics, Washington, D. C., reports that the net operating income of the railways of the United States during March increased \$118 per mile, or 48.4 per cent., as compared with March, 1915. Comparing March of this year with the average March of the last five years the increase was 45.4 per cent. The total operating revenues for the month were \$289,176,150; increase as compared with March of last year, \$57,720,345; operating expenses, \$193,643,319; increase, \$29,055,642; net operating revenue, \$95,532,831; increase, \$28,664,703; taxes, \$12,374,477; increase, \$1,183,377; net operating income, \$83,161,002; available for rentals, interest on bonds, appropriations for improvements and new construction and dividends. Operating revenues per mile averaged \$1260; increase, 24.1 per cent.; operating expenses per mile, \$844; increase, 16.8 per cent.; net operating revenue per mile, \$416; increase, 41.9 per cent.; and net operating income per mile, \$362; increase, 48.4 per cent.; taxes, increase per mile, 9.8 per cent. There are 229,428 miles of lines covered by this statement, or about 90 per cent. of the steam railroad mileage in the country.

### Plans for Jacksonville Union Station.

The Jacksonville Terminal Company has appointed a committee of five engineers to prepare plans for the construction of the new union passenger station to be erected there in place of the present depot on the Lee street site. The committee is composed of J. E. Willoughby, Chief Engineer Atlantic Coast Line, Wilmington, N. C.; E. Ben Carter, Chief Engineer Florida East Coast Railway, St. Augustine, Fla.; W. D. Faucette, Chief Engineer Seaboard Air Line, Norfolk, Va.; T. H. Gatlin, Asst. Chief Engineer, Southern Railway, Washington, D. C., and J. A. Griffin, Engineer Maintenance of Way and Structures, Georgia Southern & Florida Railway, Macon, Ga. As soon as the plans and specifications are complete the committee will invite bids for construction. J. B. Munson is President and F. C. Sawyer Secretary of the Terminal Company.

### New Savannah Terminals Opened.

The large new terminals of the Ocean Steamship Co. at Savannah will be occupied and placed in service June 1. They represent an expenditure of about \$1,000,000, and include a large dock and buildings, the latter of steel construction and comprising a north-bound freight shed, a southbound freight shed, a city delivery shed and headhouse and an office building. There are 17 tracks under the sheds, accommodating 225 freight cars. Five hoists are provided for handling freight. The dock, which has concrete side and end walls, is 225 feet wide and 1020 feet long, with 26 feet depth of water at low tide. The sheds are of great capacity and the entire improvement covers an area of 20 acres or about fourteen city blocks.

### Texas Railways to Be Merged.

The Texas Tracton Co. and the Southern Traction Co., both of Dallas, Tex., are to be consolidated July 1 under the name of the Texas Electric Railway Co., with a total length of line of 251 miles, which will include about 16 miles of line operated as street railway at Denison, Sherman, McKinney, Waco, Waxahachie and Corsicana, Tex. J. F. Strickland, of Dallas, and his associates organized the two com-

panies and he is president of each. He will also be president of the new company, which is formed for the purpose, it is stated, of operating the lines more efficiently.

The two main interurban lines in the merger are that from Dallas to Sherman and Denison, Tex., 75 miles, and that from Dallas to Corsicana and to Waco, 160 miles, making a total of 235 miles of interurban electric railway. It has been expected that the Strickland interests would build some more interurban line, especially from Waco to Taylor, about 70 miles, but no announcement has yet been made.

### Steel Scarcity Causes More Wood to Be Used in Cars.

The Southern Railway Co., in placing its recent large order for new freight cars, specified the use in construction of only about half as much steel as usual on account of the scarcity and high price of that product and the danger of not being able to get deliveries in time for building them. Thus, instead of the cars having entire steel underframes, they will have steel center sills, the rest of them being built of wood, as before the use of steel underframes began.

It is understood that two or three other railroads have also lessened the amount of steel to be employed in the construction of freight cars for which orders were lately given. This will naturally result in a greater demand for timbers of sizes suitable for car building, and in that degree stimulate the lumber industry.

### Large Gains in Coal Movement.

The Pennsylvania Railroad Co. has issued a statement showing the quantity of coal and coke (in short tons) carried on its lines east of Pittsburgh and Erie during April, and also during the first four months of the current year, as follows: April, anthracite coal, 766,540 tons; decrease as compared with the same month of last year, 360,150; bituminous coal, 3,879,270; increase, 521,208; coke, 1,254,412; increase, 421,985 tons. Four months ended April 30, anthracite coal, 3,995,058 tons; increase as compared with the same period of last year, 387,639; bituminous coal, 16,598,440 tons; increase, 3,394,694; coke, 4,932,751; increase, 1,796,489 tons. The total tonnage of all during April was 5,900,222 tons; increase, 583,043 tons, and the total for the four months' period was 25,526,249 tons; increase, 5,578,822 tons.

### Rebuilding Line for Heavier Traffic.

The Southern Railway Co. will reconstruct for handling heavier traffic and equipment 321 miles of its lines between Salisbury, N. C., and Knoxville, Tenn., the company forces laying heavier rails and ballasting the road, while a contract has been awarded to the Consolidated Engineering Co., 243 Calvert Building, Baltimore, for the reinforced concrete work on the 181-mile section between Salisbury and Asheville, N. C., which will cover 30 bridges, underpasses, culverts, approaches, piers, etc., and a similar contract has been let to H. C. McCrory, of Knoxville, for the 240-mile section from Asheville to that city. In addition to laying the heavier track, the railroad company will provide the steel work for the bridges.

### New Equipment.

Chesapeake & Ohio Railway is reported to have ordered 25allet type freight locomotives from the American Locomotive Co., New York.

Cherry River Boom & Lumber Co. has ordered a 90-ton Shay type engine from the Lima Locomotive Corporation, Lima, O.

Pennsylvania Lines West are reported in the market for 75 Mikado type locomotives.

Queen & Crescent Route has ordered 23 all-steel passenger cars, 9 all-steel baggage cars and 3 all-steel dining cars from the Pullman Co., Chicago; also 6 freight engines and 8 switching engines from the Lima Locomotive Corporation.

Seaboard Air Line has ordered 5 Mountain type locomotives from the American Locomotive Co.



Southern Railway is reported about to order 20 additional locomotives.

Illinois Traction Co. will purchase 100 box cars, 30 hopper cars and 50 gondola coal cars.

Jonesboro, Lake City & Eastern Railway has just received two new mogul type locomotives.

Snell & Hamlett, St. Petersburg, Fla., want from 1 to 5 carloads of second-hand 30-foot rails of 50 to 60 pounds weight per yard, equal to Hunt's inspection and first class.

Norfolk & Western Railway's order with the Harlan & Hollingsworth Corporation of Wilmington, Del., includes 7 passenger cars, 6 baggage and express cars, 4 baggage cars and mail cars and 3 postal cars.

Texas & Pacific Railway has just placed in use 6 Santa Fe type locomotives and 7 heavy switching locomotives, oil burners.

Louisville Railway, Louisville, Ky., will, it is reported, purchase some new equipment.

### Change of Electric Ownership.

A report from Dallas, Tex., says it is announced upon authority that the United Electric Securities Co., a subsidiary of the General Electric Co., will take over the electric light and railway properties there of the Stone & Webster Engineering Corporation, the negotiations being conducted by O. D. Young of Boston, executive vice-president of the General Electric Co. Extensions of both the lighting and street railway systems are contemplated. The street railways have at present about 68 miles of tracks. The electric plant furnishes light and power to the railway as well as to the city and private consumers.

### Big Contract for Locomotive Fuel Oil.

The International & Great Northern Railroad, according to a report from Houston, Tex., has awarded a contract for 1,200,000 barrels of fuel oil to be delivered to it during the year which will begin July 1, the contract being divided between the Magnolia Petroleum Co., the Pierce-Fordyce Oil Association and the Gulf Refining Co. It is further stated that the railroad uses oil for fuel on all its locomotives excepting those on the line between San Antonio and Laredo, where Laredo coal is employed. Texas lignite is used at the pumping stations.

### Railroad Notes.

Roy Terrell has been appointed assistant to the president of the reorganized New Orleans, Texas & Mexico Railway at New Orleans, the president being J. S. Pyeatt at Houston, Tex. Mr. Terrell has been assistant general freight agent.

Murrell L. Buckner, hitherto secretary, has been appointed superintendent of the new Union Terminal Company of Dallas, Tex.

### Machinery, Steel and Tools.

Ignacio Anitua (of Anitua Y Charola, machinery and tools, Eibar, Spain), 230 E. 29th street, New York: "It is about four months that I am here buying machinery, tools and steel; selling same in Spain on our own account. We have traveling salesmen to cover the country and warehouse with sample-rooms. The object of my presence in United States has the double purpose of obtaining the best possible prices and to become intimately acquainted with goods manufactured in the States suitable for export. We specialize in lathes, shapers, milling machines, drills and all kinds of tools and steel for tools."

### Motor Cycles, Pipe and Fittings.

Kinarivala Bros. & Co., Sakar Bazar, Kalupur, Ahmedabad, India:

"Will further thank you to publish in the MANUFACTURERS RECORD that we are in the market for wrought iron and galvanized pipes and fittings, motor cycles with side cars, and can export wood carvings to your country. Prices wanted for c. i. f. Bombay delivery."

## Good Roads and Streets

### SOUTHERN HIGHWAY ACTIVITIES.

#### Record of Week's Progress in Improvements in City and Country.

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

#### Bonds Voted.

Bedford, Ky.—Trimble county voted \$90,000 bonds to construct roads, etc.

Fayetteville, W. Va.—Fayette county voted \$875,000 bonds to construct roads.

Gate City, Va.—Scott county voted \$70,000 bonds to macadamize 30 miles of road.

Huntsville, Tex.—Walker county voted \$50,000 bonds for road construction.

Lawrenceburg, Tenn.—Lawrence county issued \$350,000 bonds for constructing portion of Jackson Highway.

Liberty, Tex.—Liberty county issued \$60,000 road warrants for road construction.

Lipscomb, Tex.—Lipscomb county voted \$75,000 bonds for road construction.

Midland, Md.—City will issue \$5000 bonds for street improvements.

Poteau, Okla.—LeFlore county voted \$108,500 bonds for road improvements.

Princess Anne, Va.—Princess Anne county voted \$130,000 bonds to improve three roads.

Spencer, W. Va.—Roane county voted \$208,000 bonds to construct roads.

West Point, Va.—City voted \$30,000 bonds for paving and other purposes.

Wichita Falls, Tex.—City voted \$40,000 bonds for street paving.

#### Bonds to Be Voted.

Brenham, Tex.—Washington county votes June 7 on \$300,000 bonds to construct 70 miles of roads.

Clarksburg, W. Va.—Harrison county votes June 20 on \$200,000 bonds to construct roads.

Gate City, Va.—Scott county votes June 29 on \$80,000 bonds for road construction.

Hempstead, Tex.—Waller county votes June 22 on \$25,000 bonds for road improvements.

Martinsburg, W. Va.—City votes June 6 on \$150,000 bonds for street paving.

Paducah, Ky.—McCracken county will vote in November on \$400,000 bonds to construct roads.

Sallisaw, Okla.—Sequoyah county votes June 7 on \$60,000 bonds to improve roads.

#### Contracts Awarded.

Asheville, N. C.—Buncombe county awarded \$128,000 contracts to construct concrete roads.

Corsicana, Tex.—City awarded contract for 50,000 square yards of street paving.

Decatur, Tenn.—Meigs county awarded contract for road construction to cost \$100,000.

Eastville, Va.—Northampton county awarded contract for 9 miles of sand-clay road construction; \$20,000 available.

El Paso, Tex.—El Paso county awarded \$106,323 paving contract.

Greenwood, S. C.—City awarded contract for 5000 square yards sidewalk paving.

Houston, Tex.—Harris county awarded contract to construct gravel roads at a cost of \$35,000.

Jasper, Tenn.—Marion county awarded contract for road construction to cost \$200,000.

Kansas City, Mo.—City awarded \$28,637 paving contracts.

La Grange, Ky.—Oldham county awarded contract for 4½ miles of road construction.

Lonsdale, Tenn.—City awarded \$18,000 contract for grading, macadamizing and draining 18 streets.

Louisville, Ky.—Jefferson county awarded \$14,156.90 contract for asphalt paving.

Morristown, Tenn.—Hamblen county awarded \$150,000 contract for road construction.

Moundsville, W. Va.—Marshall county awarded contract for 36,040 linear feet of road improvements.

New Orleans, La.—Hampton Reynolds has \$23,871 contract for wood-block paving.

Paducah, Ky.—McCracken county awarded \$5181.52 contract to improve 2 miles of road.

Potosi, Mo.—Washington county awarded contract to construct roadbed and gravel surface for 15 miles of highway.

Rutledge, Tenn.—Grainger county awarded contract for road construction to cost \$200,000.

South Boston, Va.—City awarded contract for 15,000 square yards sheet asphalt pavement.

Sulphur City, La.—City awarded \$12,000 contract for sidewalk and curbing construction.

#### Contracts to Be Awarded.

Alexandria, La.—Rapides parish will construct 23 miles of gravel roads.

Atlanta, Ga.—City receives bids until June 2 for 4850 square yards bituminous macadam paving.

Baltimore, Md.—City receives bids until June 7 to grade, curb and pave streets; 8500 square yards.

Cleveland, Miss.—Town receives bids until June 6 for graveling and oiling estimated to cost \$16,000.

Cumberland, Md.—City receives bids until June 3 to pave 14 streets.

Dunn, N. C.—City receives bids until June 12 to construct 17,000 square yards brick, asphalt, bitulithic or other pavement, 3000 linear feet concrete curb and gutter, 1000 square yards sidewalk, etc.

Erwin, Tenn.—City will expend \$23,000 for constructing asphalt paving.

Port Norfolk, Va.—City invites bids until June 6 to construct 8000 square yards of concrete sidewalks.

Gainesville, Ga.—City receives bids until June 10 for 20,000 yards of paving with brick, concrete, asphalt or other materials.

Gate City, Va.—Scott county will improve 16 miles of road; \$43,800 available.

Hagerstown, Md.—Washington county receives bids until June 15 for constructing 3½ miles of highway.

Hopkinsville, Ky.—City appropriated \$2551.12 for paving streets with Bermudez asphalt and stone.

Jackson, Tenn.—City receives bids until June 27 to construct 55,000 square yards street paving.

Madisonville, Tenn.—Monroe county receives bids until June 9 for 73 miles of grading and 90 miles of macadam and chert construction for highways.

Miami, Fla.—City receives bids until June 15 to construct 60,000 square yards pavement.

New Orleans, La.—State receives bids until June 5 for constructing 13 miles of gravel and two miles of earth highway.

New Orleans, La.—State receives bids until June 12 for constructing 77 miles of highway.

Portsmouth, Va.—Norfolk county receives bids until June 2 to improve 3.42 miles of road.

Rogersville, Tenn.—Hawkins county will let contract in June for road improvements to cost \$450,000.

Vernon, Ala.—Lamar county receives bids until June 21 for constructing 11 miles of highway and other roads.

State Highway Commission and the county commissioners through which the various roads run. The Government furnishes two engineers, the State the transportation and the county commissioners furnish the labor, which is worked under the direction of the engineers. The initial party, which will cover the route from the Atlantic Ocean to the country of high altitudes, is as follows: E. W. James, Chief of the Division of Maintenance of the Office of Public Roads; D. H. Winslow, North Carolina Government Engineer; Dr. Joseph Hyde Pratt; W. S. Fallis, State Engineer. With two of the main highways traversing the State under the patrol and maintenance system, North Carolina is giving an object-lesson in the upkeep of its roads that other States in the country could well learn. Mr. Fallis stated that travel had been possible over the Washington and Atlanta Highway through this system for 365 days in the year without either chains or non-skid tires being necessary. The new route will soon be put in just as good shape within a much shorter time than was necessary over the old route. Experience has taught both the engineers and the commissioners much about keeping the good roads in good shape.

State Highway Engineer Fallis, in speaking of the good roads activity, gave the following detailed information about recent good-roads work in various counties over the State:

In Sampson county there has been recently built about eight miles between Clinton and Faison. New road-building equipment has recently been bought.

Lovely township, in Caldwell county, has graded and topped three miles of road. A \$3700 bridge has been completed over Gunpowder Creek.

Cabarrus county, with four squads of laborers, has put in good shape 18 miles of road.

Cleveland county voted and sold \$40,000 worth of good-road bonds.

Columbus county has bought new equipment, and several new sections of the Wilmington, Charlotte and Asheville Highway have been constructed and connected up, making about 60 miles of good roads in the county. Several tributary links are being built to these highways.

About seven miles of the Yadkin road, leading from Fayetteville, in Cumberland county, to the Hoke line, has been completed. This is of sand-clay construction.

Hoke county is to build a road to the line to meet the Yadkin road. This county now has about 250 miles of improved roads out of the 480 in the county.

Davidson county is building from 50 to 200 miles of natural soil roads as a result of a recent bond issue of \$300,000.

In Franklin county a bridge is being built in Louisville.

A concrete highway is under construction in Guilford county from Greensboro to High Point, a distance of 15 miles.

Six townships in Harnett county have voted in the aggregate \$90,000 recently, and the money is now being spent on good roads.

There are five townships in Pitt county which have voted a total of \$50,000 for good roads.

On the Charlotte to Wilmington route, in Richmond county, a road is being built to connect the Ferry road with the road in Anson county. By this connection a shortening of the distance of about 30 miles has been effected.

From Salisbury to Woodleaf, in Rowan, a sand-clay road is being built.

### East Tennessee Active for Good Roads.

Nashville, Tenn., May 30—[Special.]—Good roads agitation and the organization of the Dixie and Jackson highway projects have brought about unprecedented road-building activities in Tennessee this summer, and will mean within the coming months the progress in road building that the State has ever made in a similar length of time. This activity is not confined to any section of the State, but is just now most pronounced in East Tennessee.

Monroe county will let contracts on June 6, amounting to \$250,000, for which bonds have been sold. These contracts are for road improvement work solely, consisting chiefly of macadam surfacing on roads which were graded from proceeds of bonds issued in 1912, thus completing the work begun at that time. J. T. Love,

Philadelphia, Tenn., is chief engineer for the bond commission of Monroe county.

Pickett county is preparing to do \$50,000 worth of work on its roads this summer. Road machinery has been purchased and contracts let for culverts. The machinery was purchased from J. I. Case Threshing Machine Co., Racine, Wis.; Wilson & Ingram, Chicago, Ill., and Good Roads Machinery Co., through its Nashville branch. The culvert contract was let to Tennessee Metal Culvert Co., Nashville. John Henderson, Byrdstown, Tenn., is chief engineer.

Hawkins county will let contract in June at a date not yet definitely settled for \$450,000 worth of road improvements, for which bonds have already been issued, and \$200,000 of which have been sold. H. D. Cornwell, Rogersville, Tenn., is engineer.

Marion county has let contract to Williams & Carr of Knoxville for road building aggregating \$200,000, for which bonds have been issued. The contractors accept \$100,000 of the bonds in part payment, and it is understood that convicts will be used in much of this work. It is chiefly mountain road work, and is difficult.

Lawrence county will let contracts in the near future for its part of the Jackson Highway, for the construction of which it has issued bonds amounting to \$350,000. This issue was sold this week to the Mercantile Union Trust Co. of Jackson, Tenn. A premium of \$12,000 was paid on a basis of cash instalment payments, interest on deferred payments making the premium unusually large. E. G. Parks, George S. Kirk and Frank Augustine, all of Lawrenceburg, Tenn., are commissioners. Engineer has not been selected as yet, plans up to present having been made on estimates and advice of Government engineers.

Grainger county recently let contracts to the Mann Construction Co., Knoxville, and the Beard Construction Co., Morristown, Tenn., amounting to \$200,000, and Hamblen county let contract to the Gibson Construction Co. of Knoxville for \$150,000, while Meigs let contract to Freeman & Robins of Knoxville for \$100,000.

Fentress and Pickett counties are progressing nicely on large road-improvement projects, on which no general contract will be let. Excellent progress has also been made by Maury county in the construction of its part of the Jackson Highway.

Contract has just been let to Sam E. Finley of Atlanta, for \$29,000, for road oil in Davidson, Madison, Hamilton, Knox and Shelby counties. This is a result of the special automobile privilege tax imposed by the Legislature two years ago, by which two-passenger cars are taxed \$5 and cars carrying four or more passengers are taxed \$7.50 per annum for the maintenance of a State highway department. Ten per cent. of the proceeds from this tax is appropriated for the actual maintenance of the highway department and the remainder is returned to the counties from which it originated for road-improvement work. In Davidson county there is an additional oil tax that increases that fund. J. J. Murray is secretary of the Tennessee Highway Commission, State Capitol, Nashville.

### Advantages of a National Roads System.

Washington, D. C., May 29—[Special.]—If a country like France, four times the size of New York State and with four times as much population, can develop a national roads system, why should not a similar plan prove effective in this great country? It is admitted that the United States is far behind European countries in road development. Even in the treatment of tourists this country is so backward that it has not been able to make any agreement with foreign nations for mutual privileges for motorists.

Before the European war began, arrangements had been made in Europe for the recognition in all nations of motorists who were affiliated with a national society. Membership in that society entitled the motorists to a number which, when it appeared on his machine, would enable him to travel from one country into another without the payment of additional taxes.

Yet in this country a motorist cannot always even travel from one State to another without paying additional taxes.

The Bankhead good-roads bill, which was discussed at length in these columns recently, has now passed the Senate, and it probably will be the basis for a compromise measure in the conference committee. Under

the terms of this bill as it now stands in conference a State must contribute an amount equal to what is received from the National Treasury, and then the expenditure is only made on those roads mutually decided upon by the State Highway Commission and the Secretary of Agriculture, the latter working through the United States Office of Public Roads. It may be noted that the arrangement is distinctly different from the rivers and harbors proposition, and that the States are spending their own money, and the Federal authorities must be satisfied that the road is sufficiently important to command supplementary dollars from Uncle Sam's strong box.

It had been feared that no attention at all would be paid to improving and dovetailing the various roads with a view to their military importance. It is understood now that in seacoast and border States the military part will be given very careful consideration.

## LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

### Orders and Shipments Now Ahead of Production.

New Orleans, May 30—[Special.]—With all officials and most millmen of both pine and cypress interests in the Lower Middle South gone to the meetings in Chicago, the lumber news of this section is strictly a matter of market routine.

During the week ending May 19, for the first time in many weeks, both orders and shipments of pine lumber from the whole reporting district of the Southern Pine Association were ahead of production. The margin was narrow, but it was there, and it produced a heartening effect throughout the trade.

Orders exceeded production by 709,115 feet, or 81 per cent.

Shipments exceeded production by 2,031,952 feet, or 231 per cent.

The reports are:

Week, May 15, orders, 4126; shipments, 4874; orders on hand, 21,140. Week, May 22, orders, 4426; shipments, 4492; orders on hand, 21,039.

Neither sales nor production have been forced during the last fortnight, and the policy of the yellow pine mills has been rather to await the development of the situation in the market before settling down to the summer's cut and run. Mills have rather accepted any good opportunity to reduce production, coming in the course of business.

The northern and middle western demand has not opened as strongly as was anticipated, bad weather still hampering building operations, but the trade believes that this will soon correct itself.

Meantime, car shortage continues to plague some mill owners, while others find their needs fairly well met. This, however, is now one of the minor factors in the general situation.

The best commentators on the market say that the downward trend of the last few weeks, during which spring demand has not come to expectations, has reached its lowest point.

Export trade continues on even lines. Latin American ports are getting the largest movement out of New Orleans, with little going abroad.

The recently placed order for 8,000,000 feet of pine for the Canal Zone is now in process of shipment.

### Greatest Rate-Making Task Ever Undertaken by Interstate Commerce Commission.

Washington, D. C., May 30—[Special.]—The greatest game of solitaire ever played has been completed. Eighteen thousand cards, shuffled for two months by Fred H. Esch, examiner for the Interstate Commerce Commission, were in the "deck" with which this monster game was played.

This may be a frivolous way of describing the greatest rate-making task ever attempted by the Interstate Commerce Commission, but it tells the story of one phase of the investigation of freight rates all over the nation on lumber and lumber products, which will open



in Chicago July 1 and continue until the problems of the entire industry are all investigated, with Dr. B. H. Meyer, chairman of the commission, in personal charge.

The lumber manufacturers want to avoid a proposed reclassification of lumber and its product, and hope to see an agreement which will provide a rate without discrimination toward any section of the country, and prevent the necessity for constant rate contests before State commissions. With one general agreement, rate regulation will have arrived at a new era, the handling of the entire industry of the nation in one broad schedule.

Preparatory to this general investigation, the Interstate Commission instructed Examiner Esch to make a tabulation of all rates of all roads on all products of the lumber industry, and over all routes. Examiner Esch for his great game of solitaire had every rate, route article over every road placed on separate card. There were 18,000 of these rates, and then came his game of solitaire. Taking all these cards, for instance, he selected from them all the rates applying to lumber for agricultural machinery in the rough. This meant some scores of yards, and the same course was pursued for every conceivable kind of lumber shipment.

When the great game of solitaire was completed, Examiner Esch was able to tabulate all the rates of all roads for this one class of lumber product.

When he made his summary of these rates it took a book of 357 pages, largely tables, to give these results, classified, and this book, published by the Government, is just being distributed this week, giving any shipper or railroad a classified tabulation of tariffs on every article derived from wood.

"It is merely a diagnosis which every doctor must make before he tries to apply the cure," said a department official. "The examiner by his great task has merely laid the foundation. He has tried to draw no conclusions. When the Chicago hearing is over, however, there will be a basis for the first nation-wide schedule of rates for any industry, and in attempting this work the commission has started with the second biggest industry in America, not with one of the smaller industries."

### Turpentine and Rosin Output.

The total production of turpentine and rosin for the United States in 1914 was \$20,968,684, as compared with \$25,295,017 in 1909. The output of rosin in quantity for 1914 was 2,885,077 barrels, a decrease of 370,000 barrels compared with 1909, while the output of turpentine was 26,980,981 gallons, or a decrease of a little over 2,000,000 gallons.

The Census Department, by which these figures are compiled, received reports from 1392 turpentine distilleries in operation in 1914.

Returns were received from 1392 turpentine distilleries in operation in 1914. Their total output was valued at \$20,968,684, and consisted of 26,980,981 gallons of spirits of turpentine, valued at \$10,510,407; 2,885,077 barrels of rosin, valued at \$10,332,700, and dross valued at \$125,577. In addition there were three lumber manufacturing plants which also operated turpentine stills and 14 establishments which distilled turpentine from the wood. These 17 plants produced 667,958 gallons of spirits of turpentine, valued at \$230,800, and 59,852 barrels of rosin, valued at \$242,899. The aggregate production of turpentine for 1914, therefore, was 27,648,939 gallons, and of rosin, 2,944,929 barrels.

At the census of 1909 reports were received from 1585 distilleries. The total production was valued at \$25,295,017, and comprised 28,988,954 gallons of spirits of turpentine, valued at \$12,654,228; 3,263,857 barrels of rosin, valued at \$12,576,721, and dross to the value of \$64,068.

In addition there were 24 establishments engaged in the manufacture of turpentine and rosin by the distillation of wood, which produced 706,868 gallons of spirits, valued at \$249,526. The figures for the quantity and value of rosin were not reported separately in 1909. The aggregate production of turpentine reported for 1909 was therefore 29,695,822 gallons, and of rosin 326,385 barrels.

The production of turpentine and rosin during 1914 was thus considerably less than during 1909. The figures for the later year (including the production of the lumber manufacturing and wood distillation plants above mentioned), compared with those for the earlier, show decreases of 16.1 per cent. in total value, 6.9

per cent. in quantity of spirits, 16.8 per cent. in value of spirits, 9.8 per cent. in quantity of rosin, and 15.9 per cent. in value of rosin, and an increase of 96.3 per cent. in value of dross.

The acreage of timber land worked in 1914 was 8,428,088, compared with 8,056,915 in 1909, making an increase of 4.6 per cent.

The returns show a very great increase in the use of the cup system of gathering crude gum. In 1914 the number of crops (of 10,500 cups) worked was 11,813, as compared with only 2383 in 1909, the percentage of increase being 395.7. On the other hand, the number of crops worked by the boxing system decreased from 17,775 in 1909 to 6353 in 1914, or 64.3 per cent. The number of crops in back-boxed timber increased from 6795 in 1909 to 8314 in 1914, or by 18.3 per cent.

Of the 1392 establishments reported in 1914, 561 were located in Georgia, 507 in Florida, 160 in Alabama, 61 in Mississippi, 35 each in North and South Carolina, 27 in Louisiana, and 6 in Texas.

The following statement summarizes the statistics for the principal features of the industry as reported at the censuses of 1914 and 1909:

Manufacture of turpentine and rosin—Comparative summary for the United States 1914 and 1909.

Products.	1914.	1909.
Value, total*	\$20,968,684	\$25,295,017
Spirits .....	10,510,407	12,654,228
Rosin .....	10,332,700	12,576,721
Dross .....	125,577	64,068
Spirits, gallons .....	26,980,981	28,988,954
Rosin, barrels .....	2,885,077	3,263,857
Materials—Crude gum distilled.		
Dip, barrels (500 lbs.), estimated.....	2,194,532	2,376,693
Scrape, barrels (300 lbs.), estimated.....	902,477	1,099,789
Dip and scrape purchased, barrels.....	83,666	180,119
Acreage of timber land.		
Total .....	8,428,088	8,056,915
Owned .....	2,594,331	3,248,577
Leased .....	5,833,757	4,808,338
Crops (of 10,500 boxes or cups) worked.		
By boxing.....	6,353	17,775
By cup system.....	11,813	2,383
In back-boxed timber.....	8,314	6,795

\*Exclusive of the production of lumber manufacturing plants and those which distilled turpentine from the wood.

### Selling Lumber by Department Stores.

The recent reference in news dispatches to the idea of a Portland department store, by which lumber is sold in the store, in "Short Lengths for Odd Jobs," has been followed by the establishment of similar departments in a dozen big American cities, where bits of board are sold for 2, 3 or 5 cents. The idea has spread so rapidly that a company has been formed at Portland under the name of the Miniature Lumber Company, to supply department stores with cabinets for display of such lumber, which is to be sold at standard prices the country over, and all lumber is to be under a trademark.

### Results of Experiments at the Forest Products Laboratory.

The Forest Products Laboratory, maintained by the Forest Service of the United States Department of Agriculture, in co-operation with the University of Wisconsin, has briefly summarized a year's progress in its laboratory investigations in work affecting the lumber industry, pulp and paper-making, naval stores, distillation and other chemical industries. It is explained that many of these experiments must necessarily extend over several years before final results are obtained, but the report contains much data on experiments that have been completed.

A new classification of Southern pines, based upon the density of the wood, has been developed, in that it was found that the relative dry weight of various pines may be judged by comparing the proportion of summerwood—the darker, hard portion of the annual rings—in their cross-sections, serving as the basis of the classification.

Experiments and tests to ascertain the proper shipping containers to be used for different products have been conducted by the laboratory, in co-operation with

various box manufacturers through the American Society for Testing Materials.

Drykiln experiments have been made which were aimed to reduce the time required for drying, particularly in the case of wood green from the saw. By these tests the laboratory was able to recommend improvements which simplify construction and increase efficiency in kilns. Analysis of the cause of case-hardening with methods for preventing it have been published.

The laboratory claims to have developed a method, which is in advance of any previously used, for distinguishing the woods of longleaf, shortleaf and loblolly pine. Differences in size of the pith and of the second annual ring of growth in the three woods form the chief basis for the method of identification.

Use of wood block for paving purposes is said to have fallen off 30 per cent. since 1911, and one of the chief reasons for this decline is said to be caused by the oil which exudes from the treated blocks and of the tendency of the blocks themselves to swell. Successful tests to remove these defects have been carried out. Briefly, the method is to apply both a preliminary and a final vacuum in the course of preservative treatment.

Better results in treating lumber for preventing sap stain are said to be obtained by using sodium fluoride than by the soda-dipping process. It is claimed that in solutions of equal strength sodium fluoride is at least twice as effective as sodium bicarbonate.

Preservation of piling against marine borers is increased by adding certain metal salts to the creosoting process. It was also shown that light fractions of creosote have much less resistance than the heavy ones; that water-gas-tar creosotes are slightly less resistant than coal-tar creosotes; that wood tars and their creosotes are not very resistant, and that crude oils are of no value as preservatives for piling. Investigations by the laboratory show that creosoted wood can be used in silos without contaminating the ensilage.

The laboratory is now engaged in an extensive investigation to determine under actual service conditions the exact value of preservative treatment for various kinds of railroad tie woods, having 18 test tracks under observation.

Tests of species of hardwoods and species of conifers to determine their relative resistance to decay were made in a specially constructed fungus pit and in culture jars. The pit tests are not yet completed, but the jar tests showed that the sapwood of all conifers, except Western red cedar, Western juniper, California juniper and arbovitae, lost 60 per cent. or more in weight during 12 months. Eastern arbovitae proved the most durable of the conifers, losing only 7.7 per cent. in weight. The heartwood of all spruces, hemlocks, firs and lodgepole pine also lost more than 60 per cent. in weight. The resinous hard pines varied widely, the loss in weight ranging from 17 to 58 per cent. Investigations to determine the effect of resin in wood upon its durability made definite progress, and indications are that the results will conflict with prevailing opinions.

Field studies were made of conditions in lumber yards to determine the extent and cause of the decay existing in stored timber and the relation of this to outbreaks of rot in buildings.

Production of low grades and waste in lumber were also studied, and will be incorporated in a report on the lumber industry to be made by the Forest Service.

Mill scale studies to determine the effect of two years' turpentinizing by the cup and gutter system on the quality and quantity of lumber produced show that turpentinized trees produce lumber ranging only from one-half of 1 per cent. to 1 per cent. less in value than that of unbled trees, an insignificant depreciation, and no difference was found in the quantity of lumber produced.

Patents were applied for on a new fireproofing compound developed by the laboratory.

Extensive investigations have been made by the laboratory in work affecting the pulp and paper industry, embracing the chemical processes involved, and wood-fiber studies. This is a very important subject which should be given careful consideration by the lumber manufacturers of the country, for with some additional equipment they can produce by-products more valuable than their original lumber output. Southern lumbermen will be especially interested in the successful tests conducted with longleaf pine chips. It is said that a good grade of kraft paper can be made from longleaf pine chips.

In its work affecting distillation, the laboratory ex-

periments showed that the yield of acetate and alcohol may be increased from 30 to 50 per cent. by a proper temperature control.

New methods of extracting turpentine and rosin from pine stumps were also tried by the laboratory. In co-operation with a lumber company, yellow pine stumps were shredded and extracted for turpentine and rosin. It has frequently been proposed to combine the extraction process with the manufacture of pulp from the extracted wood, but with the present process wood chipped for pulp gives a low yield of rosin. These studies were made with a view to modifying the process, so that a high yield of rosin could be obtained from chips large enough for the manufacture of pulp.

Among other investigations, the laboratory studied the Osage orange and its value as a dye producer. Tests carried on for the past few years by the laboratory and a number of textile schools have finally demonstrated the value of Osage orange factory waste as a source of dyestuff. Commercial tests in dyeing leather and woollens with colors obtained from Osage orange gave highly satisfactory results. Osage orange grown in the North is relatively lacking in dyestuff, and only material grown in Texas and Oklahoma is suitable for commercial use.

## MINING

### Asbestos Output of United States and Canada\*

The United States marketed a domestic production of 1731 short tons of asbestos in 1915, valued at \$76,952. As compared with the production of 1914, this represents a gain of 484 tons, or 39 per cent., in quantity, and of \$57,987, or 306 per cent., in value. The great increase in value was due to the high grade of the material produced.

The producing States were Georgia, Arizona and California. There were three important producers, two in Georgia and one in Arizona, besides several small producers in California. Georgia had much the largest production, a gain of 22 per cent. in 1915 over 1914, but yields only mass fiber of the hornblende variety, which is relatively of low grade, cannot be spun, and is practically all milled to one grade suitable for use in the manufacture of fireproof material. Arizona produces chrysotile only of the cross-fiber type and of spinning grade. The production of Arizona in 1915 was more than 10 times the quantity produced in 1914, and this accounts for the much greater increase in value than in quantity as compared with the total output for 1914.

The average annual production of asbestos in the United States (for the last 26 years) from 1890 to 1915, inclusive, has been 1470 short tons, ranging from a minimum of 50 tons in 1893 to a maximum of 7604 tons in 1911. In 1911 and 1912, when there was a large production in Vermont, the total value of the output exceeded that of the production in 1915. But on account of the high grade of the Arizona asbestos the average value per ton in 1915 was \$44.46, against \$15.77 and \$19.98, respectively, in 1911 and 1912.

The principal source of the asbestos sold in the United States is in Quebec, Canada, where also prices are controlled. The average price in New York has been gradually rising, especially for the higher grades, and the rise continues. Early in April, 1915, No. 1 crude was selling as high as \$500 a ton, and No. 2 at \$300.

The principal source of the world's supply of asbestos is Canada. The United States, being Canada's nearest neighbor and having every facility for intercourse, has naturally become the greatest importer of raw material from Canada and the largest manufacturer of asbestos products.

Unmanufactured asbestos is admitted to the United States free, but manufactured asbestos is dutiable at from 25 to 40 per cent. ad valorem.

Georgia produces far more asbestos than any other State. The asbestos is of the amphibole variety and of the mass-fiber type, in which 90 per cent. of the rock quarried appears in the finished product; it can therefore be produced at much lower cost than other asbes-

tos. It is all ground and fiberized to practically one grade suitable for the manufacture of cements, plasters, shingles and asbestos lumber. There are two companies operating, the Sall Mountain Company of Chicago, with mine near Cleveland and mill at Gainesville, Ga., and the Asbestos Mining & Manufacturing Co. of Atlanta, Ga., with its mine and mill at Hollywood.

As has been indicated above, the asbestos of the world is supplied chiefly by Canada. Most of it is exported free of duty to the United States, the greatest manufacturer and user of asbestos products.

An order in council by the Government at Ottawa, Canada, March 25, 1916, placed an embargo on the shipment of asbestos from Canada to other than British ports, but permitted shipments to the allied countries, France, Russia, Italy, Japan and Portugal, all special licenses being granted by the British Consul. As this absolutely shut out the consumers of asbestos in the United States, it was demonstrated to the Government at Ottawa that this would work a great hardship on American manufacturers and consumers, and the embargo has consequently been modified to the extent of permitting shipments of crude asbestos to enter the United States on the guaranty from the manufacturers and in turn from their customers that none of the crude or manufactured material will be re-exported from the United States, except as provided for in the original circular.

The embargo and the requirement of a guaranty as to the ultimate destination of the asbestos have caused asbestos users in the United States to look for an available domestic supply.

In 1915 there was a great increase in the production of high-grade asbestos in Arizona, as elsewhere mentioned, the occurrence of which has been described in recent Geological Survey reports on asbestos. The bulk of the output and the lower-grade material come from Georgia. Both Arizona and Georgia are capable of increasing their output.

Some years ago (1911) Vermont had a productive mine, largely of chrysotile, in the same belt of rocks that contain the rich deposits of asbestos in Canada. For the last few years the mine has not been in operation, but now, as a result of the embargo, it may again become an important source of supply.

Virginia produced in 1905 and 1906 a small quantity of a low-grade asbestos that is still used in the manufacture of a local asbestos product. The fiber is of the amphibole variety, slip-fiber type. It was quarried near Body Camp and hauled 12 miles to mill at Bedford City.

There has been much excitement and speculation concerning the asbestos in the Casper Mountain and other regions in Wyoming. Some mills have been erected. There has been no definite production, but the quality of the fiber, in part chrysotile, is locally encouraging. Idaho has in the Kamiah region large deposits of material like that in Georgia. California has produced asbestos, generally of low grade, at a number of places, and may yet become important in that respect.

On the whole, the encouraging outlook in Arizona, which includes also the Grand Canyon region, with the possible resumption of production in Vermont and an increased production in Georgia, may be expected to make up at least part of the loss by embargo in Canada.

### Corsicana Cotton Mills.

Referring to progress upon the construction of additions recently announced, the Corsicana (Tex.) Cotton Mills writes to the MANUFACTURERS RECORD:

"Our new warehouse has been completed, and work on our main mill addition is being pushed. Size of warehouse, 84x61 feet, one section; another section of same size will be added later. Size of main mill addition, 144x106 feet, and picker-room, 75x50 feet, both two stories. Mill when completed will have 9000 spindles, 200 looms, making single filling duck, with probably the installation of twiststers later for double and twist duck. Installing new 40-inch heavy Lowell duck looms. New plant will be electrically driven. Employ between 200 and 300 people, and have an output of approximately \$500,000 annually. Expect to have everything ready by October 1. The Dallis-Robert Company of Atlanta are architects and engineers.

## TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

### \$600,000 Republic Additions Progressing.

The Republic Cotton Mills' \$600,000 additions (previously detailed) at Great Falls, S. C., are progressing. More than sixty houses for operatives have been completed and the street grading, water-works installation, sewer construction and electric lighting system will soon be completed. The mill, reinforced concrete construction, is up to the second floor, and will be completed by August 15, ready for the installation of 32,640 spindles and 720 looms with accompanying machinery. Warehouse, boiler and pump room and other construction is progressing. Among the village buildings will be a brick construction school with space for 650 scholars, transformer-house, 100 operatives' cottages, etc. The Fiske-Carter Construction Co., Greenville, S. C., and Worcester, Mass., is the building contractor, except for the dwellings, which are being erected by the J. L. Hamby Co. Contract for the complete installation of electrical equipment has been awarded to Huntington & Guerry, Greenville, S. C. J. E. Sirrine of Greenville is the architect-engineer in charge.

### \$300,000 Combed Cotton Yarn Mill.

Organization has been effected and plant details have been determined by the Adrian Manufacturing Co., Mt. Holly, N. C., mentioned in March as having incorporated with \$300,000 capital. This company will build a two-story 310x78-foot mill and equip it with 13,056 producing spindles for spinning Nos. 60 to 80 combed yarns, the machinery being driven by electric power. The Whitin Machine Works, Whitinsville, Mass., has contract for the textile equipment, and Stuart W. Cramer, Charlotte, N. C., for the humidifying system. R. C. Biberstein is the engineer-architect for the Adrian company, whose officers are C. E. Hutchison, president and treasurer; I. C. Lowe, vice-president; J. W. Holland, secretary.

### \$125,000 Cotton Yarn Mill.

Contracts have been awarded for the building and the machinery of the Spencer Mills, Rutherfordton, N. C., mentioned last week as incorporated, etc. The building will be of brick, 310x80 feet, costing \$25,000, to be equipped with 5440 spindles and 200 horse-power electric power drive costing \$100,000. Three hundred employees will be required for this plant, and the weekly capacity will be 10,000 pounds of cotton yarn.

### 5000 Spindles and 150 Looms Additional.

The James N. Williamson & Sons Co. will build additions to Ossiipee Cotton Mills and Hopedale Cotton Mills at Burlington, N. C. This construction has been contracted for and new machinery, including 5000 spindles, with 150 looms, has been ordered. From \$150,000 to \$200,000 will be invested. This statement replaces a recent erroneous report that the Ossiipee and Hopedale companies will each add 10,000 spindles.

### Meritas Mills' Addition Progressing.

Construction is progressing on the additional building of the Meritas Mills, Columbus, Ga., referred to in April as having awarded building and machinery contracts. Final plans provide for a 385x100-foot mill-construction building costing \$125,000, the contract

\*Extracts from reports of United States Geological Survey by J. S. Diller.



having been awarded to C. T. Thompson & Bros. of Charlotte, N. C. In this addition the Meritas company will install 22,000 spindles, 400 looms and accompanying equipment, including a 1000 horse-power electric-drive equipment. Lockwood, Greene & Co. of Boston and Atlanta are the architects-engineers.

### \$250,000 Fine Combed Yarn Mill.

Details have been determined for the Groves Mills, Gastonia, N. C., mentioned May 25 as having completed organization. The company will build a two-story mill, first floor 510x78 feet and second floor 290x78 feet. It will install 11,088 spindles, and later increase to 15,000, equipped with the electric drive, obtaining electricity from the Gastonia transmission system of the Southern Power Co. of Charlotte. L. F. Groves is president-treasurer of the Groves company, and \$250,000 is the capital.

### Textile Notes.

R. R. Haynes and associates, Cliffside, N. C., have incorporated the Lakeview Mills with a capital stock of \$200,000.

The Chamber of Commerce, Newbern, N. C., plans the organization of a company to build a brick-concrete mill and equip it with 6000 spindles.

T. J. McNamara, formerly superintendent of the Lanett Bleachery & Dye Works, Lanett, Ala., is negotiating for a site on which to build a \$10,000 to \$20,000 bleachery and dyeing plant at Atlanta, Ga.

The Victor Manufacturing Co., Greer, S. C., has called a meeting of stockholders for June 28 to consider increasing authorized capital from \$2,634,000 to \$7,000,000 and changing name to Victor-Monaghan Mills.

Miles P. Hoffman of Philadelphia has purchased the Holt-Morgan Mills at Fayetteville, N. C., but advises the MANUFACTURERS RECORD that "no definite plans have been worked out as regards the future of the Holt-Morgan Mills."

The Lumberton (N. C.) Cotton Mill will not add 5000 spindles, the recent report being an error. Its enlargement will consist of building a 100x80-foot addition and installing twistors to serve 5000 spinning spindles. Contracts have been awarded.

The Maline Mills, Winston-Salem, N. C., will add seven knitting machines and 19 sewing machines, costing \$6000. Contracts have been awarded. This company was mentioned in April as awarding contract for a two-story 75x40-foot fireproof addition costing \$4000.

The Berkeley Woolen Co., Martinsburg, W. Va., will build a boiler-house addition and install two 150-horse-power return-tubular Dutch oven type boilers, contracts having been awarded. It contemplates other additions and improvements, which will not mature before the spring of 1917.

The Rocky Mount (N. C.) Mills will build a two-story 80-foot addition and equip it with new opening, carding and spinning machinery. Old type spinning frames will be replaced with new equipment and the water-power plant will be improved by deepening and enlarging the tailrace. About \$100,000 will be expended.

T. C. Thompson & Bros., Charlotte, N. C., have received contract to build the 300x175-foot weave shed, of slow burning-mill construction, for Steele's Mills, Rockingham, N. C. This company's plan for adding 17,000 spindles, building weave shed for 1000 looms, etc., was lately detailed by the MANUFACTURERS RECORD. The Dallis-Robert Company, Atlanta, is the architect-engineer.

W. T. Bryan, Athens, Ga., has purchased the Jefferson (Ga.) Cotton Mills, and will take possession on July 1. It is proposed to double the mill's capacity for production and adopt the electric drive (electricity from the Athens Railway & Electric Co.), displacing steam engine; also to build weave shed, displacing present looms to provide space for added spinning machinery. The property will be surveyed for engineering data before determining details. It now has 5000 spindles, 174 looms, etc.

## FOREIGN NEEDS

### Many Manufactures Wanted.

Siberian Company, Ltd. (of Copenhagen, Denmark), Gustav Lunn, manager of American branch, 154 Nassau street, New York:

"Enclosed is list of articles for which we at present have inquiry or for which we seek connections and eventual exclusive agencies in Russia and Siberia. Our company works with a capital of 5,500,000 crowns, and transacts an annual business aggregating 150,000,000 crowns; head office in Copenhagen; through a superior organization of branches (33) throughout Russia and Siberia from Petrograd to Vladivostok, now stands as the largest firm of Russian exporters and importers. For further reference we ask you to mention the National City Bank, New York. Files; center chucks; steel plate pulleys; drills; celluloid; canvas; carborundum wheels; parallel vises; differential pulleys; iron and wooden screws with flat heads; brass wood screws; high-speed steel for tools; electrical articles; spring iron wire; iron bolts and nails; optical, geodetical, surgical, measuring instruments; writing, carbon and drawing paper; aluminum ingots and plates; zinc plates; copper, electrolytical, ingots and lamelle copper; copper wire, insulated and enamel insulated; dynamo plates; brass rings for tents; penknives; wire twist of phosphor-bronze; phonographic articles; tin solder; water meters; piano actions; piano keys and machinery; agricultural automatic scales; barrels; scales; bolts and nuts; can-making; cellulose; chocolate; drilling; distilling; oil and gasoline motors; file-making; grinding; knitting; laundry; metal working; mining; nail spike and lock; paper-making; printing; rivet; road; sawmill; stone crushing; transmission; wire nail; washing; beet cutters; woodworking machinery; water turbines; machinery for making compound lard and machinery for cooling lard."

### Hardware, Machinery, Metals, Etc.

Segesser & Ericks, importers and exporters, Boite postale No. 580, Odessa, Russia:

"We are especially interested in aluminum in ingots and sheets; zinc and lead in ingots and sheets; rapid steel and ferro-alliages; copper in ingots and sheets; nickel in cubes and sheets; mechanical tools; chemical products. We shall be glad to receive offers from American dealers c. i. f. Vladivostok or f. o. b. New York, payment cash against documents in a New York bank. Re the outlook for selling American goods we state there is a large demand for machinery of all kinds, cutlery, files, grinding wheels, oil motors, mechanical machines, electric motors, automobiles, ice machines, etc.; in fact, every useful article manufactured in America can be sold here. Regarding our references, we can name H. C. Field, foreign sales, manager of the Nicholson File Co., Providence, R. I. Our bank references are Lazard Bros., New York, who have their own bank in London."

### Automobiles, Motorcycles, Machinery, Etc.

Enrico Fornero, Corso Romana 78, Milano, Italy:

"We will observe the MANUFACTURERS RECORD with best attention and not fail to write to firms in it which we find of interest. We are seeking American houses that mean to establish Italian agency and we are obliged if you give our name to some houses which have such an intention. The branches we apply are divers, but the chief are office and stationery articles; bicycles and automobiles; metals, hardware and machinery."

### Cloth, Hardware, Underwear, Etc.

Everett's Trading Co., Amsterdam, Holland:

"We are selling agents for two English manufacturers for the Continent of Europe, Egypt and the Dutch colonies. In consequence of the war our sales of English articles have become impossible in Austria, Germany and Belgium, which is a very important part of our territory. We address you to draw the attention of American manufacturers to the opportunity offered

by Holland to build up a trade on the Continent of Europe or a part of it and the Dutch colonies. We propose manufacturers to lay a stock of samples here and we offer our services. The building in which we have our office is the property of our managing director, and is very suitable for the purpose. We have many good business relations, and our boys could cultivate the jobbers and shipping houses in our territory against a commission to be agreed upon. Our references are: Amsterdamsche Bank, Amsterdam; Twentsche Bank-vereeniging, Amsterdam; Philadelphia Commercial Museum, Philadelphia. Further English and American references are at disposal. The articles which interest our territory are dry goods, white drills, hosiery, underwear, hardware, buttons, etc."

### A Letter from Italy.

A. Bauer, Galleria Nazionale, Scala A, Turin, Italy:

"Thank the MANUFACTURERS RECORD for reproducing our desires. In order to meet any emerging objection against granting the Italian wishes as to the c. i. f. Italian harbor clause, I beg to say that our merchants and manufacturers are ready for cash settlements, providing they can have their way in the aforesaid question. Besides, are not your national banks prepared to see to the interests of your manufacturers by establishing branch banks abroad, and is there not the American International Co. to work on the same principle?"

### Cotton Cloth for Slippers.

F. D. Boyden, manufacturers' agent, 107 Market street, Manchester, England:

"I am interested in fabrics, and am trying to replace goods formerly obtained from Germany, and the principal fabric I want is a cloth suitable for slipper making. This cloth in the trade is called 'Venetians,' and is made of a union of hemp warp and cotton and woolen weft. In appearance imitates the old-fashioned wool work. If you can give me the address of any firms who make these goods or are prepared to make them, I can find buyers and do a turnover of upwards of \$10,000 during a season. Prices vary from 1 p to 2/6 per yard, and I am prepared to supply information as to widths, designs, etc."

### Steel Balls Wanted.

Alexander Zachariou & Co., engineers, 54 Stadium street, Athens, Greece:

"An inquiry is laid before us for the supply of high carbon forged steel balls, for cement mills, of the following quantities and dimensions: 12 tons 80 millimeters of diameter; 12 tons 60 millimeters of diameter; 6 tons 40 millimeters of diameter; 6 tons 30 millimeters of diameter. Let us have by return your lowest possible c. i. f. Piraeus prices, including packing, marine and war insurance, and state also shortest time for delivery of this material. References: Horace T. Potts & Co., Philadelphia; National Association of Manufacturers, New York."

### For West Indies Trade.

Cyril E. Daniel, Saint Thomas, Danish West Indies:

"I confirm my request to obtain the business of firms willing to give me their representation for the Danish West Indies and the Republic of Haiti and other places in the West Indies for the following articles: Dry goods, wearing apparel, leather, food products, building materials, electric fixtures and fittings, etc."

### Electrical Products Wanted in Scotland.

A. Schonfield & Co., 21 Hope street, Glasgow, Scotland:

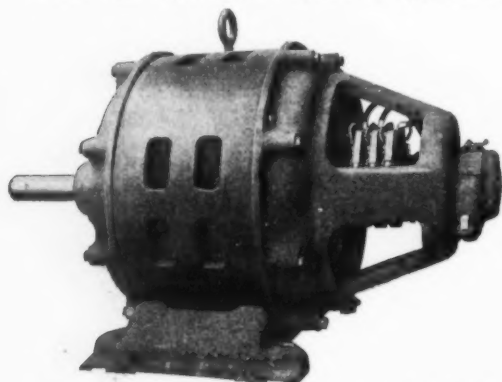
"We are large buyers of electrical goods, and if you can put us in touch with firms desiring connection with this country we shall appreciate it very much, as it no doubt would lead to further business. Our bankers are the Commercial Bank of Scotland. If necessary, we can open credit in New York, as in the past."

## MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

### Motors for Intermittent Service.

A new line of slip ring induction motors (Type CI) for severe, intermittent, varying speed service has been developed by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. These motors are especially designed for heavy duty on cranes, hoists, draw and roller lift bridges, railway turntables, transfer tables and similar applications. They can be furnished in sizes from 1½ to 200 horse-power for operation on



75 H. P. WESTINGHOUSE INTERMITTENT SERVICE MOTOR.

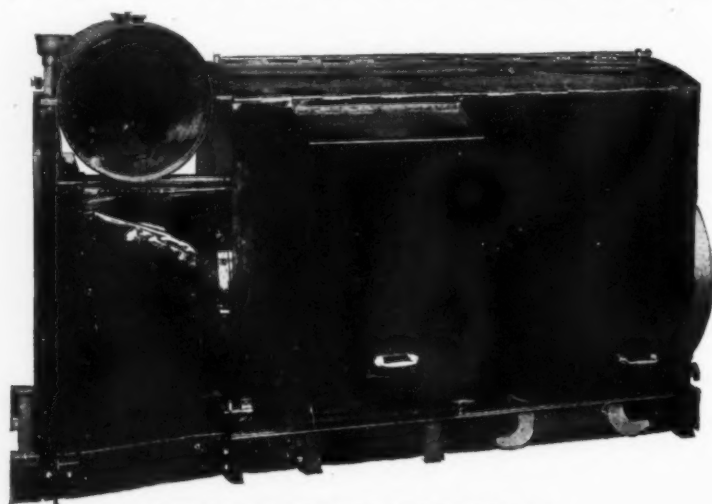
two or three phase, 220 or 440 volt, 25 and 60 cycle circuits.

The frames of the smaller sizes are made up of steel laminations riveted between forged steel end shields. In the larger sizes the frames are made of rolled open-hearth steel. The brackets are of cast iron, with reinforcing ribs to assure rigidity and perfect alignment of the bearings at all times. The bearings are large, self-oiling, of the oil-ring type. The steel brush holders are supported by and insulated from the bracket, which is open to permit easy inspection and renewal of the brushes.

The motor is made small in diameter to reduce the flywheel effect. This feature, together with perfect balance and secure attachment of the windings, is claimed to make these motors especially adapted for frequent starting, stopping and reversing. The shaft is of axle steel, and can be removed from the motor without disturbing the windings. The running torque of the motors is claimed to be the maximum obtainable, and the starting and pull-out torques in all of them are said to be double the full-load torque. The motors are designed so that in case of accident repairs may be quickly made, and maximum strength is said to be obtained, while weight and overall dimensions have been reduced to a minimum.

### Sturtevant Generating Set.

The following illustration shows a new adaptation of the B. F. Sturtevant Company's (Hyde Park, Boston, Mass.) gasoline generating set. Several of these sets have been sold to the United States Government for



STURTEVANT PORTABLE GENERATING SET.

use in aeronautical training camps, hangars, shops, etc., and for field searchlights. One of them is in operation at the Signal Corps Aviation School at San Diego, Cal. They are intended to be used in direct connection with lighting and power circuits, and not through storage batteries, although they may be so arranged if desired. A very sensitive governor control, together with other fineness in design of engine and generator, are said to insure a constant voltage through wide variations of load.

The manufacturer says that the idea of these sets was conceived with the realization that there was a demand for an electric generating set easy and inexpensive to operate; that would not require the services of an experienced engineer in constant attendance, and



PREST-O-LITE "BABY" WELDING OUTFIT AT WORK ON AUTOMOBILE BODY.

that could be easily and readily transported.

The unit consists of a Sturtevant portable electric generating set made up of a Sturtevant direct current electric generator direct connected to a Sturtevant gasoline engine, a switchboard and gasoline tank. A special type of disc fan is mounted on an extension of the generator shaft and arranged to blow air through a cellular type radiator. All of this apparatus is mounted upon two channel irons, and the engine generator and switchboard are covered by a sheet metal housing similar to an automobile hood. The engine is the four or six-cylinder, according to the size of the unit, water-cooled, vertical type. Three sizes of the sets are built, viz., 5 kilowatts, 10 kilowatts and 15 kilowatts capacity, capable, respectively, of lighting 200, 400 and 600 20-candle-power tungsten lamps. Both engine and generator are claimed to be capable of operating under an overload of 25 per cent. for two hours.

### Welding Automobile Bodies.

With the development of oxy-acetylene welding has come the need for an instrument smaller than those generally used for welding long seams on light material where particular work and strict economy are required.

A branch of industry in which this need has been felt and is said to have been met by the Type G "Baby" outfit produced by the Prest-O-Lite Co., Inc., Indianapolis, Ind., is the manufacture of automobile bodies, where panels of sheet aluminum have to be welded. An illustration herewith shows the cowl of a prominent make of automobile hammered to shape with very little metal formed over the front, the balance of the front panel being made by welding in small side sections or wings. For this class of work the type of welding outfit named above is said to be particularly adapted, owing to its small size and weight of only a few ounces, enabling easy manipulation. It is also claimed to do the work on such light sheet work more rapidly and economically than the heavier type of blow-pipe in com-

mon use on larger repair work, effecting considerable savings in gas and welded material.

Welding this class of material is largely done in the usual manner. The edge to be welded is generally turned up at right angle to about one and a half to two times the height of the thickness of the metal. Dry or liquid flux is used, which is carefully removed after the welding is cooled, to prevent corroding the aluminum by chlorine action, to which the metal is very susceptible. The edges are brought together and held with tongs a few inches from the end. When this section is welded and cooled the tongs are placed another few inches along, and so on, the part not welded being allowed to hang free, or held by a helper. Preliminary tacking of the joint at regular intervals with the welding flame, except at the point where the weld is begun, is considered poor practice, as it causes a tendency to buckle as the weld progresses.

On work such as herein described weld is said to be made at the rate of about eight or nine inches a minute. The outfit consists of a cylinder of Prest-O-Lite gas, a cylinder of compressed oxygen, both mounted on a portable truck, and the blow-pipe mentioned above.

### Junk Sold at Machinery Price.

A old ironworking New Haven lathe of 24-inch swing and 16-foot bed, light, made in 1873 and laid aside seven or eight years ago as junk, was recently pulled out of the cellar by its owner, The John B. Adt Company, Baltimore, and sold, not at its junk value of about \$20, but for \$200, to be overhauled and put in commission for use.

This incident strikingly illustrates the condition of the iron-working machinery market, and this, a member of the firm states, after the situation is much less difficult than six months or a year ago. This firm member states further that recently he has been made offers by lathe makers for delivery in much shorter time than that in which goods of this character could be obtained a year ago, when he was prevented from going into munitions making by inability to procure the necessary equipment; indicating that steel tool and machine working manufacturers have somewhat caught up with their orders, though still rushed. Getting milling and grinding equipment is still like pulling eye teeth, he asserts.



# Construction Department

## IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the post-office will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

### DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

### BRIDGES, CULVERTS, VIADUCTS

Ala., Brewton.—Escambia county will construct 100-ft. low-truss steel highway bridge 20 ft. wide, 10 tons capacity, riveted and on concrete foundation, over Burnt Corn Creek; County Comms. receive bids until July 3; also separate bids for steel span only; W. E. Rushing, Judge of Probate. (See Machinery Wanted—Bridge Construction.)

Fla., Palmetto.—A. F. Wyman, Bradenton, Fla., and others will construct bridge across Manatee River, connecting Bradenton and Palmetto, Fla.; bridge 5000 ft. long, with 18-ft. driveway; build on piling; channel draw to permit navigation.

Ga., Rome.—Floyd county will construct 2 bridges (in city) to cost \$130,000; each 3-span concrete arch structure, 400 ft. length; open construction bids June 12; W. C. Spiker, Engr., Candler Bldg., Atlanta, Ga.; Kieffer Lindsey, County Judge, Rome. (See Machinery Wanted—Bridge Construction.)

Ky., Bedford.—Trimble county voted \$90,000 bonds to construct bridges and roads; W. C. Morgan, County Judge. (Lately noted.)

Ky., Hartford.—Ohio county defeated \$300,000 bonds to construct bridges and roads. (Noted in Feb.)

Ky., Paducah.—McCracken County Commissioners let contract Durrett Construction Co., Louisville, Ky., at \$1384.57 to construct 18-ft. reinforced concrete bridge over slough near High Point; lately noted; Gus G. Singleton, Clerk Fiscal Court. (See Road and Street Work.)

La., Marksville.—Avoyelles Parish Police Jury appropriated \$7300 to construct 2 concrete bridges on road through swamp at Longbridge and 2 over swamp at Bordelon slough.

Me., Kansas City.—Kansas City Terminal Ry. Co. will construct viaduct on Holmes St. from 19th to 21st Sts.; cost \$135,000.

N. C., Salisbury.—Southern Ry., W. H. Wells, Ch. Engr. Construction, Washington, D. C., will strengthen (for heavier traffic) 21 mi. railway between Salisbury and Knoxville, Tenn.; let contract to Consolidated Engineering Co., Calvert Bldg., Baltimore, Md., for concrete construction over 181 mi.

railway between Salisbury and Asheville, N. C.; more than 30 bridges, culverts, piers, approaches, etc.; let contract H. C. McCrary, Knoxville, Tenn., for 240-mi. portion between Asheville and Knoxville; Southern will lay track and furnish steel for bridges.

Okla., Muskogee.—Missouri, Kansas & Texas Ry., L. F. Lounbladh, Ch. Engr., Dallas, Tex., will replace light spans of bridge over Arkansas River with heavier ones and construct 4 new piers; let contract to construct piers to J. W. McMurtry Construction Co., Kansas City, Mo.; total estimated cost \$62,000.

S. C., Yorkville.—York County Comms. let contract at \$5187 for construction steel bridge over Turkey Creek on Sharon-Yorkville Road.

Tenn., Nashville.—City let contract to Gould Contracting Co., Nashville, at \$28,236.25 to construct bridge across Cumberland River at Hyde's Ferry; disposition of old steel work not decided; Engr., Freeland-Klyce Engineering Co., Nashville. (Bridge plans lately described and bids noted; Finley M. Doris, Chmn. Hyde's Ferry Bridge Committee.)

Va., Clifton Forge.—City let contract Geo. W. Drewry, York, Pa., at \$2750 to build concrete bridge. (Lately noted inviting bids.)

Va., Lynchburg.—Campbell County Commissioners, Rustburg, Va., will construct steel bridge 55 ft. long over Ivy Creek, 4 mi. from Lynchburg; bids until June 8; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

### CANNING AND PACKING PLANTS

Fla., Plant City.—H. A. Shaver of Whitesburg, Tenn., will install cannery; has machinery.

Miss., Clarksdale.—Armour & Co. (main office, Chicago, Ill.) let contract M. H. Ellis of Clarksdale to remodel building.

Va., Portsmouth.—Portsmouth Canning Co., capital \$25,000, organized with E. W. Truitt, Prest.-Mgr., Salisbury, Md.; general offices, High St. and Belt Line Ry.; leased plant and will equip as cannery; daily capacity, 2000 cases.

### CLAYWORKING PLANTS

Tenn., Erwin.—Pottery.—E. J. Owen, 215 Charles St., Sistersville, W. Va., and associates will build pottery. (Supplements May item stating Mark W. Potter, Chmn. Directors Carolina, Clinchfield & Ohio Ry., 24 Broad St., New York, announces arrangements concluded for construction 7-kiln pottery to manufacture tableware; obtain feldspar and flint from Erwin plant, clay from North Carolina, and coal from Dante, Va.)

W. Va., Martinsburg.—Building Bricks, Paving Blocks, Etc.—Municipal Shale Brick & Block Co., J. W. Chandler, Mgr., let building contract to M. J. Beach, 2307 Becks Lane, Baltimore, Md., and machinery contract to E. M. Freese & Co., Gallon, Ohio; equipment to manufacture building bricks, paving blocks and other clay products; electric power; electricity from Northern Virginia Power Co. (Previously noted organized, etc.)

### COAL MINES AND COKE OVENS

Ky., Hazard.—Diamond Block Coal Co. plans to install electrically operated machinery and haulage apparatus; Kentucky Utilities Co. of Lexington to supply electricity.

Ky., Harlan.—Wilson-Berger Coal Co. will develop additional mines to be equipped with electrically operated machinery; Kentucky Utilities Co. of Lexington to supply electricity.

Tenn., Soddy.—Durham Coal & Iron Co., Chattanooga, will rebuild tippie and washing plant lately noted burned at loss of \$86,000.

Tex., Cisco.—Mrs. Will Kleiner is reported to develop coal land.

W. Va., Davis.—Davis Coal & Coke Co. will develop another mine; daily output, 750 tons; may open third mine; electric power.

W. Va., Huntington.—Amherst Fuel Co., capital \$100,000, inceptd. by E. J. Payne and T. H. Hooper of Huntington, Angus W. McDonald of Charleston, W. Va., and others.

W. Va., Pemberton.—Leckie Fire Creek Coal Co. will develop 4 additional coal mines to be electrically operated; Appalachian Power Co. of Bluefield, W. Va., to supply electricity.

W. Va., Matewan.—Matewan Coal Co., capital \$25,000, inceptd. by A. G. Simpson and J. F. Beaver of Matewan, J. J. Fessenmiller and F. N. Toney of Huntington and Harry Scherr of Williamson.

W. Va., Rose Siding.—Thacker Coal Mining Co., J. K. Anderson, Mgr., Charleston, W. Va., will install electric equipment, etc., costing \$30,000; replace compressed-air machinery; awarded contracts; 100 K. W. rotary converter, haulage motors, mining machines, tippie, hoisting machinery, etc.

W. Va., Huntington.—Huntington Development & Gas Co.; plans coal land development. (See Gas and Oil Enterprises.)

### CONCRETE AND CEMENT PLANTS

Ga., Atlanta.—Cement, etc.—Empire Cement & Limestone Co.; capital \$10,000, inceptd. by J. H. Davis, Geo. W. Collier, J. R. Collier and others.

W. Va., Ackerman.—Portland Cement.—Ernest R. Ackerman, Prest. Lawrence Portland Cement Co., 1 Broadway, New York (plant at Siegfried, Pa.), and associate Lawrence corporation directors considering construction \$500,000 Portland cement plant; have made no decision.

### COTTON COMPRESSES AND GINS

Ark., Paragould.—Index Gin Co., capital \$10,000, inceptd.; Eugene Nettles, Prest.; C. A. Weeks, V.-P.; J. W. Alexander, Secy.-Treas.

Ga., Augusta.—S. Lesser, Reynolds St., let contract to Silbert & Robinson, 651 Broad St., to erect cotton compress; cost \$10,000; 128x88 ft.; brick; tin roof; long-leaf yellow pine and brick flooring first floor; plans by J. B. Story, Augusta.

Ga., Camilla.—Kirbo Ginning Co. will install 4-gin stand; purchased all materials. (Lately noted inceptd.)

S. C., Anderson.—W. R. McCown, R. No. 5, will rebuild cotton gin lately noted burned; install 70-saw gin, single box press, line shaft and pulleys, etc.

S. C., Bishopville, R. F. D. 2.—Manville Ginning Co. (lately noted inceptd.) organized; A. B. Baskin, Prest.; R. L. Dufant, V.-P. and Secy.; has building and equipment; estimated daily capacity, 25 bales cotton.

S. C., Haiselsville, R. D. from Chester.—Haiselsville Ginning Co., capital \$1200, inceptd. by J. N. Colvin, A. R. Durham and R. C. Grant.

Tex., Bristol.—People's Gin Co., capital \$900, inceptd. by H. B. Harville, W. N. Gray and J. W. Sparkman.

Tex., Ennis.—M. R. Putz of Ennis, S. H. Dunlap of Bryan, Tex., and others will build cotton gin and 40-ton cottonseed-oil mill.

Tex., Seguin.—Farmers' Co-operative Gin Co., capital \$500, inceptd. by Hugo Rohde, O. C. Boecker and Wm. Neuman.

### COTTONSEED-OIL MILLS

Miss., Greenwood.—W. S. Barry and others will, it is reported, build 100-ton cottonseed-oil mill.

Tex., Crockett.—Houston County Oil Mill & Mfg. Co. W. A. Norris, Prest., and Thos. Self, Secy.-Mgr., will erect 60x48-ft. 2-story building; install oil mill press room and linter room machinery; 200 K. W. generators, and 540 H. P. motors; daily capacity 60 tons; lately noted to rebuild. (See Machinery Wanted—Boiler Settings.)

Tex., Ennis.—M. R. Putz of Ennis, S. H. Dunlap of Bryan, Tex., and others will build 40-ton cottonseed-oil mill and cotton gin.

Tex., Waxahachie.—Southland Cotton Oil Co. will rebuild burned plant.

### DRAINAGE SYSTEMS

Ark., Bald Knob.—T. J. Campbell and J. L. Richardson have franchise to install electric light plant.

Ark., Little Rock.—Faulkner's Lake Drainage (extending from Argenta to Scott) has had surveys made by H. A. Martin, Engr. for drainage system; comprises 6900 acres; cost \$60,000; Mark Valentine of Galloway, Ark. and others are Comms.

La., Glenmora.—Glenmora Light & Power Co. plans to install electric light plant to cost \$7500; develop about 30 kw. and construct 6 mi. of transmission lines.

La., Plaquemine.—Bayou Paul Drainage Dist., G. W. Sitman, Prest., Burtville, La., will dredge Paul Bayou, about 3 mi.; construct 20 to 30-ft. and other canals; estimated cost \$20,000 to \$30,000; drain 10,600 acres for agriculture; supersedes recent item. (See Machinery Wanted—Drainage Construction.)

Mo., Excelsior Springs.—Excelsior Springs Water, Gas & Electric Co., plans to issue \$21,500 bonds; contemplates improvements and extensions to cost \$36,490.

Mo., Republic.—City votes June 1 on proposition to grant franchise to Republic Electric Lighting Co. (Lately noted.)

N. C., Lumberton.—City, Ira B. Townsend, Clk. and Treas., voted \$30,000 bonds for light and water improvement; includes change from direct to alternating current.

Okla., Mooreland.—City will secure electricity from power plant of Woodward (Okla.) Cotton Co., and construct transmission system from Woodward to Mooreland; voted \$10,000 bonds. (Lately noted.)

N. C., Salisbury.—Beaver Dam Creek Drainage Improvement contract has been let; construction to begin about Sept. 1; B. B. Miller, Salisbury, furnishes this data.

Tex., Angleton.—Brazoria County, Angleton Drainage Dist. No. 1, let contract Texas Construction Co. of Houston to construct drainage system; 550,000 cu. yds. excavation for ditches, clearing and snagging of streams, and construction of bridges and street drains; H. N. Perry, Chmn. Drainage Comms.; T. A. Munson, Engr. (Call for bids lately noted.)

Tex., Dallas.—North Texas Pre-Pay Pan Co., capital \$30,000; inceptd. by E. H. Thornhill, W. H. Hidell and W. I. Matheny.

### ELECTRIC PLANTS

Ark., Foreman.—Foreman Light Co., R. B. Bryant interested, will construct \$4000 plant; develop 30 to 50 H. P. (Lately noted organized, \$3600 capital, by C. B. Cook, T. F. Hughes and B. M. Mauldin.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ark., Marvell.—Town is prepared to grant franchise for light and water plant; 1000 population. Address J. M. Farrar. (See Machinery Wanted—Electric Light and Water Plant.)

Ga., Metter.—City engaged W. M. Crook, Grand Bldg., Macon, Ga., as engineer in charge of constructing electric-light system to cost \$8500.

Ky., Whitesburg.—Whitesburg Commercial Club interested in plan to build electric-light plant.

Md., Baltimore.—Southern Stevedoring Co. will erect power-house at Canton; let contract Consolidated Engineering Co., Culvert Bldg., Baltimore; Mead-Morrison Mfg. Co., Equitable Bldg., Baltimore, and Chicago, to have charge of engineering.

Miss., Clarksdale.—City Commrs. will install 500 K. W. A. C. turbo-generator unit with direct-connected 125-volt exciter, cooling tower, 200 K. W. direct-connected midflow engine and generator with 125-volt exciter, etc.; bids until June 13; specifications with W. S. Bobo, City Engr., and W. W. Pointer, Supt., Water and Light Dept.; city noted in January letting contract for \$20,000 power-house addition. (See Machinery Wanted—Electrical Machinery.)

Mo., Rivermines.—Doe Run Lead Co., will construct power plant; Engrs., Velle, Blackwell & Buck, 49 Wall street, New York. (Lately noted as to be built by St. Joseph Lead Co., Bon Terre, Mo., at reported cost of \$250,000.)

N. C., Fremont.—City, F. B. Aycock, Mayor, defeated bonds for electric lights. (Lately noted.)

S. C., Camden.—City contemplates voting on \$7000 bonds to construct electric light system. Address The Mayor.

Tenn., Benton.—Tennessee Power Co., Chattanooga, plans to extend transmission system to Benton and build substation.

Tenn., Columbia.—Columbia Water & Light Co., J. S. Robinson, Secy. and Supt., contemplates installation of high-efficiency prime mover of 500 H. P., generator of same capacity, and electrically-driven pumps of about 1,000,000 daily capacity. (See Machinery Wanted—Electrical Machinery.)

Tex., Granger.—Texas Power & Light Co., Dallas, acquired Granger electric-light system and contemplates improvements.

## FLOUR, FEED AND MEAL MILLS

Ky., Farmington.—Farmington Milling Co., (lately noted inceptd., capital \$4000) will operate plant of 25 bbls. daily capacity erect 24x36-ft. building; has machinery bids; O. B. Fuqua, Prest.-Mrg.

Ky., Lexington.—Lexington Roller Mills will change from steam to electric power; purchased some motors; has daily capacity 800 bbls. flour. (Lately noted contemplating change to electricity.)

Okla., Byars.—Co-operative Mill & Elevator Co., capital \$5000, inceptd. by J. N. Forehand, W. S. Dyer, O. A. Penny and others.

Tenn., Heskell.—M. P. Smith will install roller flour mill; daily capacity, 15 bbls.; has building.

Tex., Corsicana.—Corsicana Roller Mills, capital \$10,000 inceptd. by L. J. Halbert, J. N. Garrity and H. A. Halbert.

Tex., Lampasas.—Walter Dovovan may install 10-bbl. corn and flour mill, with feed equipment and steam or oil engine. (See Machinery Wanted—Flour Mill, etc.)

## FOUNDRY AND MACHINE PLANTS

Mo., St. Louis—Water Heaters.—American Water Heater Co., capital \$250,000 inceptd. by W. Fraser Stewart, Lee B. Mettler and Gunther Meier.

Tex., El Paso.—Ornamental Iron, etc.—Moore-Schilling Co., capital \$2000, inceptd. by Chas. E. Schilling, Fred B. Moore and Harold E. Christie.

W. Va., Sistersville.—Iron Works.—Tilley-Reimann Iron Works, capital \$50,000, inceptd. by Jas. G. Tilley, F. A. Reimann, John Kin-kald and others.

## GAS AND OIL ENTERPRISES

Ark., Lonoke.—Gas Plant.—Cherry Creek Gas & Oil Co. has franchise to construct gas plant and mains.

Fla., Jacksonville.—Oil Station.—Freeport & Mexican Fuel Oil Corp. (main office, 11 Wall St., New York) will establish branch

oil-storage plant; acquired 20 acres on which to build tanks and other facilities; wires Manufacturers Record; Have acquired deep-water terminal; will erect large storage and distributing station for serving shipping and industrial trade.

La., Edgerly.—Louisiana Co., capital \$15,000, inceptd.; Claude J. Campbell, Prest.; C. E. Berdon, V.-P.; M. J. Muller, Secy.-Treas.

La., Edgerly.—Big Woods Oil Co., capital \$15,000, inceptd.; Oscar Bevers, Prest.; E. J. Fairchild, V.-P.; W. E. Cline, Secy.-Treas.

Md., Baltimore.—Oil Refinery.—Interocean Oil Co., 90 West St., New York, will build oil refinery; purchased water-front site; reports state will invest \$4,000,000; may build portion of plant on United States Asphalt & Refining Co. (controlled by Interocean) property at Curtis Bay, resulting in further enlargement of United States plant; Inter-ocean plant to manufacture gasoline, naphtha, axle grease and lubricating oils; use petroleum transported to Baltimore from Mexico by Interocean Transport Co.

Miss., Biloxi.—Gas Plant.—Wm. H. Arm-brecht and others of Mobile, Ala., purchased Gulf Gas Co.'s plant and plans to expend \$75,000 to \$100,000 for improvements during first year of operation; later proposes to expend \$100,000 additional; L. J. Davis of Mobile to be in charge. (Lately noted as having franchise.)

Mo., Kansas City.—Hocquard Oil & Gas Co., capital \$12,000, inceptd. by Z. D. Brown, L. C. Dolbins and W. D. Hocquard.

Okla., Ada.—Viola Petroleum Co., capital \$10,000, inceptd. by A. K. Wheeler of Ada, G. E. Vaughn and M. S. Vaughn of Coalgate, Okla.

Okla., Blackwell.—Joe Burrs Drilling Co., capital \$5000, inceptd. by A. L. Clarke, W. C.

Okla., Nowata.—Northeastern Oil Co., capital \$20,000 inceptd. by Frank A. Beebe, L. I. Beebe and Stella M. Beebe.

Okla., Oklahoma City.—C. O. D. Oil & Gas Co., capital \$50,000, inceptd. by C. O. Davenport, W. C. Riddle and A. C. Riddle.

Okla., Oklahoma City.—Penn-Well-Wat Oil Co., capital \$50,000, inceptd. by L. Cummins, John P. Adams and C. C. Adams; all of Waurika, Okla.

Okla., Oklahoma City.—Louis Oil & Gas Co., capital \$12,000, inceptd. by W. N. Hayes, Geo. J. Amos, Jas. Brazell and W. A. Ledbetter.

Okla., Okmulgee.—Oil Refinery.—Sapulpa Refining Co., Sapulpa, Okla., purchased refinery; is reported to enlarge and improve.

Okla., Okmulgee.—Oil Refinery.—Benj. Kalkhoff will build 1500-bbl. daily capacity oil refinery in Mid-Continent field.

Okla., Sallisaw.—Gasoline.—Taylor Clark Oil & Gasoline Co., capital \$8000, inceptd. by J. A. Taylor, J. C. Wall and J. W. Boydston.

Okla., Tulsa.—Idabelle Oil Co., capital \$10,000, inceptd. by Robt. J. Boone, M. G. Newberry and E. P. Boomer.

Okla., Tulsa.—Getty Oil Co., capital \$250,000, inceptd. by J. Carl Smith of Tulsa, Geo. F. Getty and J. Paul Getty of Los Angeles, Cal.

Okla., Tulsa.—Ben Franklin Oil Co., capital \$100,000, inceptd. by E. Bee Guthrey and H. B. Guthrey of Tulsa, Geo. N. Foster of Eagoner, Okla., and M. S. Blassingame of Sallisaw, Okla.

Okla., Tulsa.—Ole Oil & Gas Co., capital \$60,000, inceptd. by W. E. Moss of Tulsa, Jno. B. Enfield of Oklahoma City, Victor Swanson of Wichita, Kans., and J. A. Christensen of Tarkio, Mo.

## THE OFFICIAL PROPOSAL ADVERTISEMENTS

Appear This Week On Pages 96, 97, 98

Notices of bond sales, construction and improvement contracts to be let, equipment and supplies to be purchased, franchises offered, etc., inserted in this department bring bids from the most important bond buyers, investors, financial institutions, contractors, engineers, architects, manufacturers, and supply houses throughout the country.

Rate 20 cents per line per insertion.

The PROPOSAL department goes to press 9 A. M. Wednesday for the issue of the following day. If you cannot mail advertisement in time for any particular issue please wire copy by night letter.

Send for booklet of testimonial letters from public officials who have used the PROPOSAL department of the Manufacturers Record, for bond sales, construction work, etc.

Brown and C. M. McGeehee, all of Bristow, Okla.

Okla., Cherokee.—Alfalfa Oil & Gas Co., capital \$10,000, inceptd. by L. R. Smith and J. H. Chowning of Cherokee, J. C. McClure of Ingersoll, Okla., and others.

Okla., Drumright.—Ridenour Oil & Gas Co., capital \$14,000, inceptd. by J. B. Pickens, W. D. Tharel and L. H. Cravens.

Okla., Knowles.—Knowles Co-operative Co., capital \$10,000, inceptd. by Frank Householder of Knowles, R. V. Nicholson and Bert Chokey of Madison, Okla.

Okla., Marlow.—Rock Falls Oil & Gas Co., capital \$40,000, inceptd. by J. A. Carson of Marlow, J. H. Guest and Fred Bauman of Duncann, Okla.

Okla., Muskogee.—Concharty Oil & Gas Co., capital \$50,000, inceptd. by J. H. McDonald of Muskogee, Okla.; Clayton Mark of Lake Forest, Ill., and Anson Mark of Evanston, Ill.

Okla., Muskogee.—Kewf Oil & Gas Co., capital \$64,000, inceptd. by E. S. Warner, W. D. Egolf, E. L. Kistler and D. N. Fink.

Okla., Muskogee.—Fort Smith Producing Oil & Gas Co., capital \$25,000, inceptd. by W. H. Lampton, Chas. A. Moon, D. C. Lampton and others.

Okla., Muskogee.—Oil Refinery.—Will Owens will build refinery replacing Cudahy Refining Co.'s plant lately burned; reported to double capacity of former plant and add wax plant.

Okla., Newkirk.—Gasoline.—Kayco Oil Co., John C. Collins, Prest., will build plant to manufacture casing head gasoline from gas. (See Machinery Wanted—Gasoline Machinery.)

Okla., Newkirk.—Gaspipe Line.—City voted \$250,000 bonds to build double gaspipe line to Newkirk field, 12 mi. from Newkirk; C. S. Miller, Mayor. (Lately noted.)

Okla., Tulsa.—Oil Refinery.—Constantin Refining Co. will increase daily capacity of plant from 4500 to 12,000 bbls. oil.

Okla., Tulsa.—Central Petroleum Co., capital \$30,000, inceptd. by A. M. Appleman and Ray S. Fellows of Tulsa and H. Appleman of Kansas City, Mo.

Okla., Tulsa.—Petroleum and Gasoline.—Hilgrade Petroleum & Gasoline Co., capital \$200,000, inceptd. by H. D. Cornell of Tulsa, Bernard Douglas and Chas. Douglas of New York.

Okla., Tulsa.—Cosden Oil & Gas Co. purchased Devonian Oil Co.'s properties in Cushing field for more than \$1,000,000; purchase includes 40,000 acres gas and oil land, 236 producing gas and oil wells, daily production of 1000 bbls. oil and 400,000,000 cu. ft. gas, etc.; now drilling additional wells.

Tex., El Paso.—Oil Refinery.—Robt. Ligon of Iowa Park, Tex., submitted proposition to build \$50,000 oil refinery.

Tex., Houston.—Rosson Oil Co., capital \$16,000, inceptd. by J. Rosson, W. F. Ames and John Spiridulas.

Tex., Houston.—Chireno Oil Co.; capital \$12,000, inceptd. by Virgie D. Hardee, C. F. Stevens and A. R. Eckert.

Tex., Houston.—Gulf State Petroleum Co., capital \$60,000; inceptd. by Lyman M. Taylor, R. D. Taylor and W. N. Fox.

Tex., Houston.—Delta Oil Co., capital \$60,000, inceptd. by J. A. Jones, Jr., E. W. Bertner and M. G. Hargrave.

Tex., Houston.—Dixie Oil & Gas Co. increased capital from \$15,000 to \$20,000.

Tex., Houston.—Rothschild Petroleum Co., capital \$60,000, inceptd. by Sigmund Rothschild, S. Minchen, Nathan Minchen and others.

Tex., Sour Lake.—Hull Oil Co., capital \$12,000, inceptd. by E. L. Bradley, T. S. Crosbie, M. F. Young and A. Merchant.

Va., Norfolk.—Oil Refinery.—The Texas Co., Houston, Tex., and 17 Battery Pl., New York, reported to build oil refinery.

W. Va., Huntington.—Oil and Gas Products.—Kentucky Oil & Gas Products Co., capital \$32,000, inceptd. by A. B. Brode, Chas. E. Doebler, Fred A. Fitch and others.

W. Va., Logan.—Locoma Oil & Gas Co., capital \$10,000, inceptd. by Jas. P. Jones, J. A. Washington, Don Chaufin and others.

W. Va., Huntington.—Huntington Development & Gas Co., capitalization \$5,500,000, chartered; authorized bond issue \$20,000,000; plans \$700,000 expenditure during summer in Huntington and nearby territory; lay 12-in. pipe line from gas fields to Huntington; drill more than 50 gas wells; develop coal land; is consolidation of Guyandotte Land Assn., Lincoln County Land Assn., Intervale Oil & Gas Assn., Four Mile Oil Co., Deral Oil Co., Irvine Coal Co., Mingo Coal Co., and Virginia Investment Co.; E. W. Clark & Co., Mgrs., Philadelphia, Pa. (Consolidation plan lately stated, etc.)

## HYDRO-ELECTRIC PLANTS

Ala., Attmore.—W. D. Owens, J. E. McCoy and others are reported as organizing company to develop water-power on Perdido River and generate electricity for transmission to towns and cities in Baldwin county and portions of West Florida.

Ga., Royston.—J. B. McCrary Co., Atlanta, Ga., is engineer for proposed development of water-power on Broad River, about 8 mi. from Royston; \$300,000 bonds to be issued.

Tenn., Chattanooga.—Land Investment Co. (Theo. F. King and others) will build hydro-electric plant. (See Land Developments.)

## ICE AND COLD-STORAGE PLANTS

Md., Cohill, P. O. at Hancock.—Toadloway Orchard Co. is reported as contemplating erection of cold-storage plant.

S. C., Greenville.—Blue Ridge Brokerage Co., John G. Landrum, Prest., will establish \$25,000 cold storage plant; equipment to include refrigerator plant for storage of meats.

Tenn., Chattanooga.—Chattanooga Warehouse & Cold-Storage Co., contemplates erecting addition; 6 stories; 80x188 ft.; reinforced concrete; cost \$70,000; plans by W. T. Downing, Atlanta.

Tex., Galveston.—E. R. Hanff, representative of National Brewery branch of Independent Breweries Co., St. Louis, Mo., is interested in securing site for cold storage and ice plant to cost about \$50,000.

Va., Lynchburg.—Lynchburg Dairy & Ice Cream Corp. will erect ice factory cost, \$60,000.

## IRON AND STEEL PLANTS

Tenn., Allens Creek.—Iron Furnace.—Bon Air Coal & Iron Co., Robt. Vaughn and E. C. Lewis, Receivers, Stahlman Bldg., Nashville, Tenn., has blown in furnace noted in Mch.; operating principally on high silicon iron.

## IRRIGATION SYSTEMS

Fla., Jacksonville.—Standard Irrigating Co., capital \$25,000, inceptd.; James H. Payne, Prest.; Lorenzo A. Wilson, V.-P.; Stockton Broome, Secy.-Treas.

## LAND DEVELOPMENTS

Ala., Mobile.—Padgett Land & Orchard Co., capital \$4000, inceptd.; purchased 653-acre tract known as Henry Padgett Nurseries, in Mobile County, of which 275 acres are planted in Satsuma trees.

Fla., Jacksonville.—Southern Plantation Corp., capital \$5000, chartered; W. S. Jennings, Prest.; J. W. Busard, V.-P.; E. L. Bryant, Secy.; A. L. Hines, Treas.

Fla., Miami.—Miami Corp., capital \$500,000, will develop 625 acres known as Cocoplum Bench, on Bay Biscayne, south of Miami; engaged in preliminary work; will improve with water-works, electric plant, streets, sewers, landscape gardening, etc., and 18-hole golf course; improvements to cost about \$400,000; Wm. I. Phillips, Prest.; J. Walwright, Jr., V.-P.; F. W. Cason, Secy. (Lately noted.)

Md., Baltimore.—Geo. R. Morris, 45-46 Gunther Bldg., will develop 30-acre tract for residential section.

N. C., Mt. Airy.—Ideal Orchard Co. inceptd.; capital \$25,000; S. M. Robinson, Prest., Woodlawn, Va.; J. K. Caldwell, Secy., Galax, Va.

Tenn., Chattanooga.—Land Investment Co. inceptd. by Theodore F. King, Frank Spurlock, W. D. Carswell and others; purchased and will develop property in and around Green's Lake and utilize lake for generating



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electricity; lake covers 10 acres; engaged engineer to design proposed power plant.

Va., Newport News.—Riverside Corporation, capital \$50,000, inceptd. by A. Horwitz, Pres.; S. R. Buxton, V.-P.; S. H. Wertheimer, Secy. and Treas.

W. Va., Bluefield.—Mountain View Land Co., capital \$110,000, inceptd. by C. A. Bradshaw, J. T. Thornton, W. C. Pollock and others.

### LUMBER MANUFACTURING

Ala., Mobile.—Lindsey Lumber & Export Co., M. Lindsey, Pres., is erecting mill of 100,000 ft. daily capacity export and domestic; cost of machinery about \$60,000; mill plans by C. Snowden. (In March noted incorporated, capital \$50,000.)

Ark., Fayetteville.—J. H. Phipps Lumber Co., increased capital from \$250,000 to \$400,000.

Ala., Montgomery.—Hoyt Parker Lumber Co., capital \$200, inceptd. by Hoyt Parker, J. B. Hogue and L. S. Arnold.

Ark., Kingsland.—C. K. Wheeler purchased 89 acres timber land 4 mi. from Kingsland and will develop.

Florida.—Interstate Lumber Co. of Quitman, Ga., purchased timber in Florida south of Quitman; Weaver-Loughbridge Lumber Co., of Boyd, Fla., is associated with Interstate Company and will cut part of timber.

Ga., Albany.—Reynolds Bros. Lumber Co., will erect hardwood mill; develop hardwood timber tract.

Ky., Lawrence County.—Cockburn & Whaley Lumber Co. of Canada, represented by H. A. Davis, Huntington, W. Va., purchased oak timber land; will install mills.

Miss., Kosciusko.—Bolinger-Franklin Lumber Co., S. H. Bolinger (Pres.), S. H. Bolinger & Co., Shreveport, La., Pres., purchased all equipment for lately-noted plant; includes complete 2-band mill, with bolters and engines for power plant, locomotives and flat cars for logging, water and electric light machinery; later may install 2-line haul skidder. (See Machinery Wanted—Skidder.)

N. C., Wilmington.—Bladen Lumber Co., capital \$10,000, inceptd. by E. M. Hall, N. B. McCanness and F. M. McCubbin.

S. C., Martin.—Martin's Mill Co., capital \$10,000, inceptd. by J. B. Bagnall, H. P. Clawson and Callahan Anderson.

S. C., Timmonsville.—L. Anderson & Co. let contract to P. N. Anger & Co., care Albion Hotel, Augusta, Ga., to build and equip complete single band mill and dry kiln.

Tex., Crockett.—Brooks-Morris Lumber Co., capital \$20,000, inceptd. by H. Brooks, T. G. Morris and H. F. Moore.

Tex., Paris.—Estes Lumber Co., capital \$25,000, inceptd. by C. W. Estes, J. V. Estes and A. M. Patrick.

Tex., Port Arthur.—Port Arthur Planing Mill, capital \$15,000, inceptd. by J. O. Eicks, W. C. Bevan and A. H. Eicks.

W. Va., Weston.—Holly Elk Lumber Co., capital \$25,000, inceptd. by Box 251; J. B. Wolfe, Buckhannon, W. Va., Pres.; R. C. McCandless, Cowen, W. Va., V.-P.; Samuel K. Hazlett, Secy.; installed circular saw mill.

### METAL-WORKING PLANTS

Mo., St. Louis.—Roofing, etc.—John Clemens Sheet Metal Co. inceptd. by John Clemens and others.

Tex., Beaumont.—Brass.—Oil City Brass Works, capital \$500, inceptd. by Geo. E. Bryant, C. J. Ficklen and F. L. Pivoto.

### MINING

Ala., Birmingham.—Minerals.—Cherokee Mineral Co., capital \$12,000, inceptd. by W. H. Wilson and others.

Ark., Pindall.—Lead and Zinc.—J. C. Shepherd completed plans for tailing mill; daily capacity 200 tons.

Ark., Zinc.—Lead.—Libby H. Mining Co. organized with J. C. Huggins, Pres., and J. R. Williams, Secy.-Treas.; will develop lease, 4 mi. from Zinc, containing deposits of lead carbonate.

Mo., Carthage.—Lead and Zinc.—Ozark Mining Co., plans to install steam drills; may build mill.

Mo., Joplin.—Lead and Zinc.—A. M. Cox, C. A. Veteto, B. M. Sims and others leased 42 acres mining land and contemplate development.

Mo., Joplin.—Lead and Zinc.—F. A. Wal-lower contemplates rebuilding burned mill—Cumberland No. 1; electric motive power.

Mo., Joplin.—Lead and Zinc.—Wade Mining Co., Evans W. Buskett, Treas., will build concentrating plant of 120-acre lease.

Mo., Joplin.—Lead and Zinc.—T. O. Sandell Mining & Milling Co., will build concentrating plant; 28x120x18 ft.; cost \$15,000.

Mo., Joplin.—Lead and Zinc.—Adirondack Mining & Milling Co., 31 McKinley Bldg., organized; John H. Galey, Pres.; W. H. Roberts, Mgr.; develop 20 acres; output mines, 200 tons per 10 hours; install 150 H. P. high-pressure boiler, direct-connected electric-light plant, oil engine to pump oil from car to tank, etc.; Mr. Roberts lately noted to build concentrating plant. (See Machinery Wanted—Electric Plant, etc.)

Okla., Miami.—O. K. Mining & Royalty Co., capital \$230,000, inceptd. by G. T. Walker, Leedey S. Walker and V. V. Grant.

Mo., Mount Vernon.—Minerals.—Little Six Mining Co., capital \$800, inceptd. by L. F. Seneker, Geo. B. Orr and C. A. McCause.

Mo., Rivermines.—Mining.—Doe Run Lead Co. will construct power plant lately noted as to be built by St. Joseph Lead Co. of Bonne Terre, Mo.; Engrs., Velle, Blackwell & Buck, 49 Wall St., New York. (See Electric Plants.)

Mo., Webb City.—Lead and Zinc.—National Zinc & Lead Co. is reported as contemplating erection of additional concentrating plant.

Mo., Webb City.—Zinc.—Missouri Zinc Smelting Co., capital \$100,000, inceptd. by M. R. Lively, W. H. Robertson and W. M. Robertson.

N. C., McDowell County.—Gold.—Q. A. Stephenson and O. W. Slane, both of Statesville, N. C., will develop gold mines.

N. C., Statesville.—Valley Mining Co., capital \$500, inceptd. by L. A. Stephenson, Fred A. Slane and O. W. Slane.

Okla., Davis.—Grace Mining Co., capital \$25,000, inceptd. by T. H. Slover, R. A. Vaughn, J. T. Hill, N. L. Hale and others.

Okla., Miami.—Pike Mining Co., capital \$50,000, inceptd. by E. C. Mabon of Miami, H. O. Abbott and J. H. Wright of Lebanon, Mo.

Okla., Miami.—Defender Mining Co., capital \$25,000, inceptd. by E. C. Mabon of Miami, J. L. Diffenderfer and J. H. Wright of Lebanon, Mo.

Tenn., Chattanooga.—Page Mining Co., increased capital \$25,000 to \$40,000.

Tenn., Knoxville.—Manganese.—Tennessee Manganese Co., capital \$20,000, inceptd. by S. V. Carter, John L. Boyd, Roy V. Andrews and others.

Va., Bridgewater.—Limestone and Onyx.—Betts & Boice, Inc., 35 Cantrell Ave., Harrisonburg, Va., will develop limestone and onyx quarry; installing rock crusher and agricultural lime pulverizer.

Va., Richmond.—Appalachian Lead & Mining Co., capital \$500, inceptd.; John L. Ingram, Pres.; Holt S. Lloyd, Secy.

Va., Richmond.—Soapstone.—Blue Ridge Soapstone Co., capital \$200,000, inceptd.; Tobias B. Johnstone, Pres.; W. M. Lotz, Secy., both of New York.

### MISCELLANEOUS CONSTRUCTION

Ark., England.—Levee.—Plum Bayou Levee Dist.; will enlarge 6 mi. of levee on river-side slope; 9,000 cu. yds.; bids until June 2; Dickinson & Watkins, Engrs., State Bank Bldg., Little Rock. (See Machinery Wanted—Levee Construction.)

Fla., Jacksonville.—Dock.—Port Commrs., 407 Realty Bldg., let contracts totaling \$45,000 for work on dock at foot of Market St.; Eppinger & Russell of Jacksonville at \$13,352.75 to furnish crenosold piling; Dougherty-Conn Construction Co., Jacksonville, at \$22,141.26 for sub-structure, including flooring and strestle for railroad tracks; other contracts awarded are those to furnish railroad track scales, warehouse hand trucks, fire hose and house equipment; dock to be 400x33 ft., extending from bulkhead line to pierhead line, with railroad track along east side of pier with depressed slips or truckway ramps on west side to accommodate river boats and small craft; platform 50x16 ft., 4½ ft. above mean low water to accommodate gasoline craft; shore-line bulkhead embankment of interlocking sheet steel piling with steel tie-back system; building and railroad-track trestle supported by crenosold pine piles; untreated pine

piles for fender piles and cypress lumber for sub-structure.

Ga., Augusta.—Canal.—River & Canal Commrs. let contract Morrison & Glover to construct canal to divert water of Rocky Creek to Butler's Creek; 40,000 cu. yds. excavation; W. Z. Williams & Co., of Macon are sub-contractors.

La., Mandeville.—Sea Wall.—City will repair portion of sea wall in front of city damaged by storm of Sept. 29, 1915, and complete sea wall and fill in front of city; W. G. Davis, Mayor, receives bids until June 6. (See Machinery Wanted—Sea Wall Construction.)

Md., Baltimore.—Dredging.—Government will dredge in Elk and Little Elk Rivers; bids until June 30 at U. S. Engr. office, 339 Custom-house. (See Machinery Wanted—Dredging.)

Md., Baltimore.—Heating Plant.—John J. Carlin, 215 St. Paul St., let contract Louis F. Andrae & Co., 10 E. Perry St., Baltimore, at \$25,000 for further extension of community heating plant supplying Sunlight Home development on Reisterstown Rd.; supply 51 additional dwellings.

Miss., Clarksdale.—Concrete Slab.—Levee Board will construct following concrete work: Plain concrete slab without reinforcement on front slope of levee in following localities: on levee sections 34 and 35, length 2200 ft.; on sections 54 and 55, length 6900 ft.; on sections 64 and 65, length 3750 ft.; on section 70, length 1000 ft.; concrete to be 3 in. thick, containing 35,000 sq. yds.; bids until June 6; T. G. Dabney, Ch. Engr., Clarksdale. (See Machinery Wanted—Concrete Work.)

Miss., Greenville.—Levee.—Mississippi Levee Commrs., W. L. Thompson, Ch. Engr., will construct 512,000 cu. yds. levee work; bids until June 12. (See Machinery Wanted—Levee Construction.)

Miss., Vicksburg.—Levee.—Third Mississippi River Dist., P. O. Box 494, will construct 243,000 cu. yds. levee; bids until June 10; (See Machinery Wanted—Levee Construction.)

### MISCELLANEOUS ENTERPRISES

Ala., Anniston.—Mica Crusher.—Jas. R. Payne, Box 576, may establish mica-crushing mill. (See Machinery Wanted—Crusher.)

Ala., Birmingham.—Engineering.—E. F. Hettrick Engineering Co., capital \$10,000, inceptd. by E. F. Hettrick and others.

Ala., Birmingham.—Laundry.—Acme Laundry Co., has plans for enlargement of plant; cost \$10,000.

Ala., Birmingham.—Publishing and Printing.—Birmingham News Co.'s architects for its new building are Joy & Gallup, Jefferson County Bank Bldg., Birmingham. (Architects' names lately incorrectly noted.)

Ky., Dayton.—Delivery.—Interstate Motor Delivery Co., capital \$1500, inceptd. by Chas. A. Quinby, Geo. Rice and W. C. Quinby.

Ky., Louisville.—Contracting.—Cooper Construction Co. (noted in May as inceptd. with \$15,000 capital) organized; H. H. Snyder, Pres.; E. M. Power, V.-P.; M. B. Snyder, Secy.; office, 445 Baxter Ave.; general construction contracting. (See Machinery Wanted—Sawmill.)

Ky., Hazard.—Coaling Stations.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, Ky., let contract to Roberts & Schaeffer Co., McCormick Bldg., Chicago, for coal-handling equipment for 3 reinforced concrete coaling stations to be built at DeCoursey, Hazard and Ravenna, Ky.

Mo., Kennett.—Printing.—Kennett Printing Co., capital \$4000, inceptd. by W. R. Plunkett, W. J. Ward, W. S. Davis and others.

Mo., Rolla.—Publishing.—Rolla Times Co., capital \$500, inceptd. by Albert Newman, W. L. Simpson and Frank H. Simpson.

Mo., St. Louis.—Contracting.—W. Goebel Contracting Co. inceptd. by J. W. Goebel, C. M. Walker and others.

Mo., St. Louis.—Dyeing, etc.—Gibbins & Lohn Dressing & Dyeing Co. inceptd. by Philip B. Foulke, Albert A. Ahearn, Dan J. Halley and others; capital stock \$100,000.

Mo., St. Louis.—Optical.—Eggert-Reber Optical Co., capital \$500, inceptd. by Ernest Eggert, Chas. F. Reber and Arthur J. Fries.

N. C., LaGrange.—Publishing.—LaGrange Publishing Co., capital \$5000, inceptd. by John W. Stanton, Jas. Abbott and Floyd Barwick.

N. C., Bayboro.—Potato Drying.—Herman Smith, Williamsport, Pa., and others are reported as contemplating erection of potato-drying plant.

N. C., Washington.—Tobacco Redrying.—Ficklen & Webb of Greenville and Kinston, N. C., will build tobacco and redrying plant; 60x80 ft.

Okla., Byard.—Grain Elevator.—Co-operative Mill & Elevator Co., inceptd. by J. N. Forehand and others. (See Flour, Feed & Meal Mills.)

Okla., Faxon.—Grain Elevator.—Faxon Grain Co., capital \$1000, inceptd. by L. J. McAtee, I. T. McAtee and S. Gillespie.

Okla., Henryetta.—Construction.—Henryetta Construction Co., capital \$500, inceptd. by R. D. Long, Edgar Graham and N. A. Gibson.

Okla., Sand Springs.—Hardware.—Sand Springs Hardware Co., capital \$5000, inceptd. by C. D. Miles and A. M. Miles of Cushing, Okla., and W. A. Partridge of Purcell, Okla.

S. C., Chesterfield.—Publishing.—Advertiser Publishing Co., capital \$500, inceptd. by P. H. Hearn and R. E. Hanna.

Tenn., Knoxville.—Engineering.—Oliver Engineering Construction Co., capital \$10,000, inceptd. by R. E. Oliver, W. D. Roberts, J. J. Roberts and others.

Tex., Dallas.—Printing.—Harned Printing Co., capital \$500, inceptd. by J. H. Harned, C. D. Harned and C. W. Harned.

Tex., San Antonio.—Lithographing.—Lafayette Ward, owner, State Bank Bldg., will erect \$75,000 fireproof heavy reinforced concrete building, to be leased by Maverick-Clarke Lithograph Co.; plans by Ralph Cameron, San Antonio; Whitaker & Washington, San Antonio, Construction Engr.; bids opened May 27. (Noted in Mar.)

Tex., Sherman.—Grain Elevator.—Diamond Mill Co. is reported to build grain elevators costing \$40,000.

Va., Rocky Mount.—Hardware.—Angle Hardware Co., capital \$50,000, inceptd. by N. P. Angle, Pres.; B. L. Angle, Secy.-Treas.

W. Va., Chester.—Water Bottling.—Chester-Rock Springs Co., capital \$5000, inceptd. by T. L. Young, Robt. McElrany, J. E. McDonald and others.

### MISCELLANEOUS FACTORIES

Ala., Birmingham.—Distributing Cabinet.—National Machine Co., capital \$25,000, inceptd. by W. V. Bartlett of Birmingham, J. T. Robinson, H. T. Bartlett and J. E. Bartlett of Montgomery, Ala.

Ala., Dothan.—Gasoline-saving Device.—N. F. Cheairs is interested to establish manufacture of device for saving gasoline consumption in less expensive automobiles. (See Machinery Wanted—Gasoline-saving Device.)

Ala., Mobile.—Bakery.—Gordon Smith will enlarge bakery.

Ala., Tuscaloosa.—Bottling.—Lime Cola Bottling Co., capital \$10,000, inceptd. by J. W. Hunnicutt, Letcher Melton and F. M. Holley.

Ark., Camden.—Screen Doors.—Rockwell Mfg. Co., John F. Judd, Pres., purchased woodworking machinery and let building contract for lately noted additions; doubles present capacity.

Ark., White Cliffs.—Chalk, Kaolin and Marl. White Cliffs Chalk & Marl Co. organized; main office at Hope, Ark.; C. C. Henderson, Pres., El Paso, Tex.; Martin Walsh, V.-P., and Traffic Mgr., Nashville, Ark.; W. Y. Foster, Jr., Mgr., Hope; erecting \$6000 mill-construction building; install machinery for daily capacity 150 tons chalk, kaolin and marl; will crush, screen, put-rize and sack. (Supersedes May item mentioning White Cliffs Lime Co.)

Fla., Haines City.—Grapefruit Juice and Marmalade.—Florida Fruit Products Co., increased capital from \$50,000 to \$100,000; M. V. B. Sample, Pres.; J. D. Langston, V.-P.; J. W. Sample, Secy.; Claude E. Street, Mgr.; will erect 2½ to 3-story 40x100 ft.; fireproof building, after plans by E. D. Robins, Haines City; install special machinery for expressing, pasteurizing and bottling grapefruit juice; capacity 1000 gals. grapefruit juice and 3 tons marmalade per 10 hours.

Fla., Jacksonville.—Denatured Alcohol, etc. E. S. Bacon and others contemplate organizing company to manufacture denatured alcohol and probably pearl buttons.

Fla., Jacksonville.—Shipbuilding.—Merrill-Stevens Co., will erect concrete bldg., 41x156 ft.; upper floor for moulding loft to lay down ships; ground floor for offices and storage.

Fla., Jacksonville.—Bottling.—F. Auerbach Co., capital \$20,000, inceptd. by G. Muller, Pres.; Fred Auerbach, V.-P.; C. J. Pierce, Secy.

Fla., Sumterville.—Food Products.—Dixie Food Products Co., capital \$30,000, inceptd. by B. L. Welborn, Pres.; Herman A. Zeller, V.-P.; Arthur G. Zeller, Secy. and Treas.

Ga., Augusta.—Vitrified Shale Bricks.—Augusta Vitrified Shale Brick Co., capital

\* \$100,000, inctpd. by John C. Hagler, W. K. Hagler and others.

Ky., Louisville—Tobacco.—National Tobacco Co. will build smokestack to cost \$5000.

Ky., Louisville—Paint, etc.—P. H. Callahan Co., capital \$30,000, inctpd. by J. M. and R. E. Callahan, W. B. Kuser, W. H. Kuhl and others.

Ky., Louisville—Chemicals.—Gateway Chemical Co., capital \$1500, inctpd. by W. C. Green, Henry C. Boden and Robt. N. Krieger.

Ky., Paducah—Cereals.—Kentucky Cereal Co., capital \$50,000, inctpd. by H. F. Singleton, Geo. A. Allen, W. A. Lackey and Cecil Reed.

Ky., Russell—Creamery.—Russell Creamery Co., capital \$40,000, inctpd. by W. H. Gilley, I. M. Gilley and J. F. York.

Md., Baltimore—Building Products.—National Paper Products Corp., capital \$100,000, organized by E. G. S. Rieker, 1911 Eutaw Pl., and others; plans to manufacture fibreboard, lumber substitutes, etc., from waste paper, sawdust and other similar products.

Md., Baltimore—Nitrogen Products, etc.—The Air Reduction Co., 50 Broad St., New York, will build plant to manufacture liquid oxygen, liquid nitrogen, etc., from air; has oxygen station; also plants in Philadelphia, Chicago, St. Louis, Pittsburgh, etc.; \$2,500,000 capital stock; has American rights to French process; Walter W. Birge, Prest., St. Louis.

Md., Baltimore—Shipbuilding.—Geo. P. Miller, Clement C. Smith, Prest. Wisconsin Securities Co.; Oliver C. Fuller, Prest. Wisconsin Trust Co.; Luddington Patton, all of Milwaukee, Wis., purchased controlling interest in Baltimore Drydock & Shipbuilding Co. from Baltimore Trust Co.; purchase price of control about \$828,000; plant is completely equipped for building ships, and improvements costing about \$200,000 were recently completed; plant includes several docks, marine railways, machine shops, etc., now employing 1800 men.

Md., Baltimore—Oxygen.—Linde Air Products Co., 42d St. Bldg., New York, let contract to West Construction Co., Knickerbocker Bldg., Baltimore, to construct plant building; 140x125 ft.; 1 story; brick and steel structure; concrete foundations, floor and roof; cost \$25,000; install machinery to manufacture oxygen from air; daily capacity 100,000 ft.; sell in metal vessels for metalworking; purchased all equipment. (Linde corporation noted in April as wiring principal facts to Manufacturers Record.)

Miss., Florala, P. O. at Latimer—Turpentine Still.—Jackson Naval Stores Co., Biloxi, Miss., will rebuild burned turpentine still.

Mo., Kansas City—Mops.—Allen Mop Mfg. Co., capital \$12,000, inctpd. by M. P. Allen, Wm. C. Perry and Herbert Lee.

Mo., St. Louis—Mechanical Devices.—Mechanical Development Co., capital \$3000, inctpd. by L. A. Mapel, Oliver Frazier and E. C. Wheeler; to manufacture mechanical devices, etc.

Mo., St. Louis—Store Fixtures, etc.—G. A. Hasemann & Sons Mfg. Co., capital \$10,000, inctpd. by G. A. Hasemann, G. A. Hasemann, Jr., and Chas. A. Hasemann.

Mo., St. Louis—Garments.—Susman's Garment Co., capital \$5000, inctpd. by Sam Susman, Abe Susman, Nathan Susman and Louis Bernstein.

Mo., St. Louis—Comforters.—Star Comforter Co., capital \$5000, inctpd. by A. B. Plows, Samuel Rosenthal and Harry Geller.

Mo., St. Louis—Paper.—Federal Paper Stock Co., capital \$20,000, inctpd. by David Charak, Max Kleban and George Streff.

Mo., St. Louis—Chemicals.—H. M. T. Chemical Products Co., capital \$100,000, inctpd. by Sam S. Medallie, C. Hoffman and H. W. Trippett.

N. C., Icard—Handkerchiefs.—D. B. Mull, W. Y. Frazier and others forming company to build factory for ladies' handkerchiefs. (See Machinery Wanted—Handkerchief Machinery.)

N. C., Greensboro—Cedar Oil.—Geo. C. Brown & Co., will install plant, including boiler and tanks, to distill cedar oil from sawdust; ordered equipment.

N. C., Wilmington—Bottling.—Electric Bottling Co., capital \$5000, inctpd. by G. H. Huttaff and others.

N. C., Sugar Grove—Cheese.—Cove Creek Co-operative Cheese Factory has 36x14-ft. building; has 200-gal. vat and ordered 400-gal. vat; manufacture full cream cheese. (Supersedes recent item.)

Okla., Bristow—Lightning Arrester.—Company is being organized with \$10,000 capital to manufacture lightning arrester invented by H. W. Hartsaw.

Okla., Shawnee—Reeves Mfg. Co., capital \$25,000, inctpd.; K. H. Kerfoot, Prest.; F. M. Cunyas, V.-P.; H. T. Douglas, Treas.; Joshua Reeves, Mgr.

S. C., Cheraw—Creamery.—D. F. Matthews, F. P. Evans and others are interested in plan to establish creamery.

Tenn., Chattanooga—Paint.—American Cement Paint Corp., capital \$25,000, inctpd. by W. P. D. Moross, Morrow Chamberlain, John Stigmaler and others; acquired bldg and will install plant to manufacture paint.

Tenn., Knoxville—Automobile Lights.—Safety Automobile Light Co., capital \$25,000, inctpd. by J. G. Buchanan, Jos. Dougherty, B. D. Gibbs and others.

Tenn., Knoxville—Hats.—Bowman-Moore Hat Co., capital \$100,000, inctpd. by E. L. Bowman, P. A. Moore, J. J. Long and others.

Tex., Lockhart—Storage Batteries.—Clear Fork Storage Battery Co., capital \$10,000, inctpd. by Albert A. Borchert, Otto Borchert and A. E. Lawrence.

Tex., San Antonio—Lafayette Ward, owner, will expend \$75,000 to erect lately-noted reinforced concrete building, to be occupied by Maverick-Clarke Lithograph Co. (See Miscellaneous Enterprises.)

Va., Fredericksburg—Bottling.—Coco-Cola Bottling Works, J. J. Garner, Prest., acquired plant of Crystal Bottling Co. and will install additional machinery. (Lately noted inctpd. with \$25,000 capital.)

Va., Newport News—Paint.—Duristo Paint Co., First National Bank Bldg., will expend \$25,000 to build manufacturing plant of steel and concrete construction; open bids about Aug. 15; Harry Reynier, Prest.; J. B. Weaver, Secy.; H. A. Hope, Mgr. (Lately noted securing site.)

W. Va., Cameron—Glass.—Homer W. Case, West Brownsville, Pa., interested in plan to build glass works.

W. Va., Paden City—Table Glassware, etc. Paden City Glass Co., David Fisher, Prest.-Mgr., has let contracts for glass-plant equipment; will manufacture pressed and blown table glassware, novelties, hotel and bar goods. (Lately noted inctpd., capital \$100,000, and to erect 105x274-ft. \$90,000 main fireproof structure, also other buildings.)

W. Va., Wheeling—Chemicals.—Wheeling Chemical Products Co., capital \$300,000, organized with A. A. Schramm, Prest.; R. H. Schaeffer, V.-P.; E. S. Romine, Secy.-Treas.; leased portion of brewery and will equip to manufacture chemicals for matches and explosives. (Lately reported organized, etc.)

## MOTORS AND GARAGES

D. C., Washington—Garage.—Harper Overland Co., 1022 Connecticut Ave. N. W., let contract H. D. Watts Co., Garrett Bldg., Baltimore, Md., to erect building.

Ky., Louisville—Automobile Devices.—Best Mfg. Co., capital \$100,000, inctpd. by Geo. H. Turner, A. T. Bruevign and S. S. Fitzpatrick; manufacture devices and electrical appliances for automobiles, including gasoline saver, electrical-current saver and improved parts for engines; rent temporary factory; later proposes to build plant.

Ky., Owensboro—Auto Arcs.—American Auto Arc Co., capital \$10,000, inctpd. by W. H. Brannon, J. W. McCulloch, Urey Woodson and others.

Mo., St. Louis—Automobiles and Accessories.—Locust Motor Sales Co., capital \$20,000, inctpd. by A. K. Haines, R. L. Easton and J. H. McKinney.

N. C., Asheville—Garage.—J. D. Earle let contract to J. V. Miller, Asheville, for brick and stone work on 7000 garage, 43 Broadway; 42x92 ft.; brick and stone structure; asbestos composition roofing; concrete basement floor; balance flooring, wood; electric elevator, 5000 lbs. capacity; plans by T. E. Davis, Asheville.

Okla., Tulsa—Automobiles.—Western Motor Car Sales Co., capital \$10,000, inctpd. by E. Westerman, J. E. Washington, Jr., and Jesse L. Terry.

S. C., Columbia—Automobiles.—Columbia Overland Co., capital \$20,000, inctpd. by R. D. Lambert, J. B. Helman and A. C. Jones.

S. C., Charleston—Automobiles.—Carolina Sales Co., capital \$10,000, inctpd. by W. A. O'Hagan and Jas. S. Farnum.

Tenn., Memphis—Automobiles.—Caro-Schlecht Motor Sales Co., increased capital from \$5000 to \$15,000.

Tex., El Paso—Garage.—Marr & Prim will erect garage to cost \$16,000.

Va., Norfolk—Garage.—F. F. Wilkinson & Co., 310 Arcade Bldg., will construct garage; 110x73 ft.; semi-fireproof; construction; cost \$3200; will not award contract.

## RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Okla., Ardmore.—Ardmore Ry. Co. will build 55x40-ft. street-car sheds and shops; 1 and 2 stories; fireproof construction; corrugated-iron roofing; dirt and concrete floor; I. M. Putnam, Gen. Contr., Ardmore. (See Machinery Wanted—Railway-construction Materials, etc.)

Okla., Tulsa.—St. Louis & San Francisco R. R. V. K. Hendricks, Engr., St. Louis, Mo., is reported to build 35-stall roundhouse.

## ROAD AND STREET WORK

Ala., Centerville.—Blibb county will grade, drain and surface with gravel part of Randolph and Maplesville Rds.; State aid; County Comms. receive bids until June 29; W. S. Keller, State Highway Engr., Montgomery, Ala. (See Machinery Wanted—Road Construction.)

Ala., Florence.—City Comms. will pave Tombigbee St.

Ala., Grove Hill.—Clarke county will grade, drain and surface with sand-clay portions of proposed Jackson Highway from Thomasville to Fulton, Fulton through Grove Hill to Jackson, and Jackson to river; County Comms. receive bids until June 29; A. L. Smith, Engr., Thomasville, Ala.; Clayton Foscoe, Judge of Probate. (See Machinery Wanted—Road Construction.)

Ala., Vernon.—Lamar county will grade, drain and gravel part of Sulphur and Detroit Rds.; State aid; County Comms. receive bids until June 21; also at same time bids to construct 11 mi. of Vernon and Columbus (Miss.) Rds.; W. S. Keller, State Highway Engr., Montgomery, Ala. (See Machinery Wanted—Road Construction.)

Ark., Hot Springs.—Government will construct extension to driveway, curbs and grading, etc., at postoffice; bids until June 21. (See Machinery Wanted—Driveway Extension, etc.)

Ark., Pine Bluff.—Jefferson County Road Improvement Dist. No. 15 organized to construct macadam road from free bridge to Altheimer, Wabbaseka and Humphrey, 40 mi.; cost \$195,000; J. P. Walt and others, Comms.

Fla., Miami.—City, W. B. Moore, City Clerk, will construct about 60,000 sq. yds. pavement; grading and paving, asphaltic concrete, binder course, concrete foundation, curb, gutter, etc., Highway Improvements 46 to 51; bids until June 15. (See Machinery Wanted—Paving.)

Ga., Atlanta.—City will pave with bituminous macadam Candler St. from DeKalb to McLendon St., 2750 sq. yds.; Greenwich St. from Dargan to Holderness St., 2100 sq. yds.; W. E. Chambers, Purchasing Agt., receives bids until June 2. (See Machinery Wanted—Paving.)

Ga., Gainesville.—City, R. E. Andoe, Clk. of Council, will pave about 20,000 yds. on Broad and Washington Sts. with brick, concrete asphalt or other material; receive bids until June 10; lately noted. (See Machinery Wanted—Paving.)

Ky., Bedford—Trimble county voted \$90,000 bonds to construct roads and bridges; W. C. Morgan, County Judge. (Noted in May.)

Ky., Harlan.—Harlan County Fiscal Court let contract to J. A. Kreis Co., Knoxville, Tenn., to construct 14½ mi. road; 15 per cent. relocation water macadam complete; 20 mi. additional contract will be let; \$250,000 (bonds noted voted in Feb.) available for county road construction; L. E. Yoder, Engr., Harlan; Road Comms. and County Judge in charge. (Bids lately noted.)

Ky., Hartford.—Ohio county defeated \$300,000 bonds to construct roads and bridges. (Noted in March.)

Ky., Hopkinsville.—City appropriated \$2551.12 to pave 7th St. from Virginia St. to Louisville & Nashville R. R. with Bermudez asphalt and stone.

Ky., LaGrange.—Oldham County Comms. invite bids to construct Buckner-to-Crestwood State-aid road and 4½ mi. of LaGrange to Shelbyville intercounty road.

Ky., Louisville.—Jefferson County Comms. let contract G. W. Gosnell Co. of Louisville at \$14,156.90 for 4.68 mi. asphalt paving on 18th-St. Rd.; construct and reconstruct various roads during present year; in addition to cost of actual work, county will purchase asphalt direct from mines at estimated cost of \$15,000; State to contribute about \$12,000.

Ky., Mount Sterling.—City will pave Sycamore, High, Locust and W. Main Sts.; paved with brick or asphalt. Address The Mayor.

Ky., Paducah.—McCracken County will vote in Nov. on \$400,000 bonds to construct roads. Address County Comms.

Ky., Paducah.—McCracken County Commissioners let contract Fred Beyer of Paducah at \$5181.52 to improve 2 mi. of Noble Rd., and to Durrett Construction Co. of Louisville, Ky., at \$1384.57 to construct 18-ft. reinforced concrete bridge over slough near High Point; Gus G. Singleton, Clerk Fiscal Court. (Call for bids lately noted.)

La., Alexandria.—Rapides Parish, Road Dist. No. 6, will construct about 23 mi. 16-ft. wide gravel roads—unit, Jefferson Highway; L. W. Sylvester, probable engineer, Alexandria, La.; J. P. Turregano, Prest. Police Jury. (Lately noted voting \$80,000 bonds.)

La., New Orleans.—Highway Dept. Board of State Engrs., Room 104 New Orleans Court Bldg., will construct 65 mi. gravel roads in De Soto Parish and 12 miles earth roads in Grant Parish; bids until June 12; W. F. Atkinson, State Highway Engr. (See Mch. Wntd.—Road Construction.)

La., New Orleans.—Hampton Reynolds, Maison Blanche Bldg., New Orleans, has contract at \$23,371 to reconstruct portion of Girod-St. wharf floor with wood-block paving.

La., New Orleans.—Highway Dept., Board of State Engrs., Room 104, New Orleans Court Bldg., New Orleans, La.—Bids until June 5 to construct following: Section Shreveport-Homer highway, Bossier parish, 13.4 mi., gravel; section Columbia-Colfax highway, La Salle parish, 2 mi., earth; W. E. Atkinson, State Highway Engr. (See Machinery Wanted—Road Construction.)

La., Sulphur City.—D. S. Perkins, Mayor, let contract to DeJersey & Naff, Opelousas, La., to construct lately-noted sidewalk and curbing at cost of about \$12,000; Floyd Hamilton, Engr.

Md., Baltimore.—City will grade, curb and pave following streets: Homestead St. from Harford Rd. to Polk St.; Polk St. from Montpelier St. to Gorsuch Ave.; Montpelier St. from Harford Rd. to Polk St.; Taylor St. from Homewood Ave. to Bartlett Ave.; \$500 sq. yds.; bids until June 7; John H. Robinette, Prest. Comms. for Opening Streets. (See Machinery Wanted—Paving.)

Md., Cumberland.—Allegany county will construct 0.51 miles on Williams road, 0.60 miles Bedford road, and about 2.22 miles Boston-Pekin road; bids until June 7. (See Mch. Wntd.—Road Construction.)

Md., Cumberland.—City rejected bids (lately noted) to pave 14 streets, aggregating 27,210 sq. yds. brick paving on concrete base, and 11,450 sq. yds. concrete paving; invites new bids until June 3; Ralph L. Rizer, City Engr., City Hall. (See Machinery Wanted—Paving.)

Md., Hagerstown.—Washington county will construct 3.56 mi. Boonsboro and Williamsport Rds.; bids until June 15; D. A. Wolfinger, Clerk County Comms. (See Machinery Wanted—Road Construction.)

Md., Midland.—City will issue \$5000 bonds to grade and pave streets and alleys and construct sewers. Address The Mayor.

Miss., Cleveland.—Town will gravel and oil sections of Sharp and Leflore Aves. and South Court St.; L. M. Guynes, Clerk, receives bids until June 6; cost \$16,000. (See Mch. Wntd.—Paving.)

Miss., Holly Springs.—City will improve public square; include 7600 sq. yds. concrete pavement, 2400 cu. yds. grading, 1200 sq. ft. sidewalk, etc., has bids; H. H. Hull, Engr., Memphis, Tenn.; Albert Herr, Mayor.

Mo., Greenfield.—Dade county, Lockwood township, is reported voted May 27 on \$25,000 bonds to construct roads. Address County Comms.

Mo., Kansas City.—Board of Public Works let following contracts for paving: F. C. McCormick at \$17,004 to pave Summit St. with sheet asphalt; Geo. H. Musselman at \$4286 and \$382, respectively, 19th and Main Sts. with creosoted wood blocks; A. Jaicks Co. at \$7347, Quincy St. with concrete; C. F. Wilcox at \$11,116, W. Prospect Pl., curbing and paving; Curtis Hill, City Engr.

Mo., Potosi.—Washington County Comms. let contract J. C. Mulville & Bros., Alton, Ill., to construct road and gravel surface for 15 mi. highway; 6½ mi. from Caledonia to Potosi and 8½ mi. from Caledonia to Bismarck.

N. C., Asheville.—Buncombe County Commissioners let following contracts to construct concrete roads: O. S. Minus at \$38,000, 3 mi. from Black Mountain to Swannanoa township line; concrete 16 ft. wide and 6 in. thick; contain 23,160 sq. yds.; Crinkley Construction Co. at \$40,000, 3 mi. from western corporate limits of West Asheville toward



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Hominy Station; concrete 16 ft. wide and 6 in. deep; contain 28,160 sq. yds.; Reed & Wells at \$50,000, 4 mi., leading from western corporate limits of West Asheville, through Emma toward County Home; concrete 16 ft. wide and 6 in. thick; contain 37,768 sq. yds.; also let contract C. H. Alexander to grade road from McDowell county line to Ridgecrest, 3200 ft., preparatory to have road concreted, estimated cost \$1500; arranged with town of Weaverville to extend Weaverville Rd. through Weaverville, 1 1/4 mi.; width 16 ft.; Weaverville to pay \$5000 of cost and county \$7500. (Supersedes recent item.)  
N. C., Dunn.—City, J. W. Turnage, Mayor, will construct 17,000 sq. yds. brick, asphalt, bitulphic or other pavement, 3000 lln. ft. concrete curb and gutter, 1000 sq. yds. sidewalk, with drainage, etc.; bids until June 12 (change of date); Gilbert C. White, Engr., Durham, N. C. (See Machinery Wanted—Paving.)  
N. C., Halifax.—Halifax County, Littleton Township Highway Com., R. W. Hamill, Thelma, N. C., Secy., let contract to P. R. Ashby, Littleton and Rocky Mount, N. C., to construct 10 mi. clay-gravel roads; \$12,000 available; 10 mi. let; may let 15 mi. additional; Engr., N. C. Hughes, Jr., Weldon, N. C.; bids lately noted. (See Machinery Wanted—Road Machinery.)  
Okla., Poteau.—LeFlore County voted \$108,500 bonds to be apportioned for road improvements as follows: Bokoche township, \$30,000; Pecola township, \$10,000; Braden township, \$33,000; Spiro township, \$28,000; Cowlington township, \$7500; A. B. Green, County Commr.  
Okla., Salisaw.—Sequoyah County Commissioners ordered vote June 7 on \$60,000 bonds to improve roads; \$24,000 for Vian Dist., \$25,000 for McKey Dist. and \$11,000 for Sadie Dist.  
Okla., Tulsa.—City will pave and otherwise improve sections of 12th St., Detroit, Elwood and Illinois Aves., etc.; City Commissioners receive bids until June 5; Frank Newkirk, City Auditor. (See Machinery Wanted—Paving.)  
S. C., Greenwood.—City let contract Percy Lumley, Greenwood, for 5000 sq. yds. sidewalk paving; \$10,000 available; C. P. Ballenger, Engr. (See Machinery Wanted—Mixer (Concrete).)  
Tenn., Bolivar.—Tennessee State Board of Control (John S. Denton and others) Nashville, Tenn., appropriated \$2500 to improve State road from Bolivar to hospital.  
Tenn., Byrdstown.—Pickett County has purchased machinery, and contemplates road improvements to amount of \$50,000; John Henderson, Byrdstown, Ch. Engr.; let culvert contract to Tennessee Metal Culvert Co., Nashville. (Noted in Mch.)  
Tenn., Decatur.—Meigs County let contract to Freeman-Robbins Co., Knoxville, Tenn., to construct roads; cost \$100,000. (Bids noted in Apr. R. L. McKenzie, Secy., County Commrs.)  
Tenn., Erwin.—City will expend about \$23,000 to construct asphalt paving, Improvement Dist. No. 1; will soon open bids; Chas. P. Toncray, Engr., Erwin. (Lately noted.)  
Tenn., Jackson.—City will construct 55,000 sq. yds. street paving; vitrified brick monolithic construction; bids until June 27; Jno. L. Williams, Engr.; Hu M. Harris, Commr. of Streets; Lawrence Taylor, Mayor; lately noted to pave Royal, Highland and Main Sts. with vitrified brick. (See Machinery Wanted—Paving.)  
Tenn., Jasper.—Marion County Commrs. let contract to Williams & Carr, Knoxville, to construct roads to amount of about \$200,000; mainly mountain road work; construction partly by convict force. (Bids noted in April; 30 miles grading, 15 miles macadam and chert, and 43 miles resurfacing.)  
Tenn., Lawrenceburg.—Lawrence County Commrs. issued \$350,000 bonds, and will soon let contracts to construct county's portion of Jackson Highway; has not yet selected engineer. (Noted in Mch. to vote bonds.)  
Tenn., Lonsdale.—City let contract J. J. Conner & Bro., Knoxville, Tenn., at \$18,000 to grade, drain and macadamize 18 streets; Holt Bros., Engrs., Bank & Trust Bldg., Knoxville; H. E. Christenberry, Mayor. (Lately noted.)  
Tenn., Morristown.—Hamblen County road contract (bids noted in Mch., to be received Apr. 1) was let to Gibson Construction Co., Knoxville, Tenn., at \$150,000. (Mar. statement noted grading and macadamizing of 4 mi. highways and streets; Henry B. Havelly, Engr., Morristown.)  
Tenn., Madisonville.—Monroe County Pike Commrs., L. A. Hunt, Secy., will improve

roads; to include 73 mi. of grading and 90 mi. of macadam and chert; bids until June 9; contract subject to sale of bonds; total issue \$225,000, of which \$150,000 has been sold and \$175,000 will be sold as work progresses. (See Mch. Wtd.—Road Construction.)  
Tenn., Nashville.—State Dept. of Highways let contract Sam E. Finley of Atlanta, Ga., at \$24,385 to furnish 700,000 gals. Mexican asphaltic oil for use in surface treating on State highways in Davidson, Hamilton, Knox, Madison and Shelby counties, including 10,000 to 30,000 gals. for several small towns. (Call for bids lately noted.)  
Tenn., Rogersville.—Hawkins County Commrs., will let contract in June (date not definite) for road improvements to cost \$450,000; H. D. Cornwell, Engr., Rogersville. (Noted in Mch.)  
Tenn., Rutledge.—Grainger County let contracts to Mann Construction Co., Knoxville, and Beard Construction Co., Morristown, Tenn., for road construction amounting to \$200,000. (Bids noted in Apr.; H. B. Helm, Chmn. Road Com.)  
Tenn., Wartburg.—Morgan county, G. M. Bohannon, Judge, defeated bonds for roads. (In April noted to vote \$100,000 additional bonds for road construction.)  
Tex., Athens.—Henderson County, Road Dist. No. 1, will construct 40 mi. sand-clay roads; bids until June 10; A. B. Axtell, Engr., Athens; C. D. Owen, County Judge. (See Machinery Wanted—Road Construction.)  
Tex., Austin.—City let contract Uvalde Rock Asphalt Co., Beaumont, Tex., to pave 11th St. from Lavaca to Brazos St.; M. C. Welborn, City Engr.  
Tex., Beaumont.—Jefferson County Commissioners let contract to J. M. Gregg, Nome, Tex., at \$3800 to construct 3.22 mi. Mansfield Ferry Rd.; Neches Shell & Dredging Co., Beaumont, received contract to supply shell at \$1.55 per cu. yd., total amount \$3875. (Bids lately noted, as one of four contracts.)  
Tex., Brenham.—Washington County Commissioners ordered vote June 7 on \$300,000 bonds to improve roads. (Washington County, Precinct No. 3, lately noted as contemplating vote on this amount.)  
Tex., Center.—City will gravel Shelbyville St. from Public Sq. to depot and 25-ft. strip around public square. Address The Mayor.  
Tex., Corsicana.—Navarro county defeated \$40,000 bonds to construct roads. (Noted in April.)  
Tex., Corsicana.—City let contract for 50,000 sq. yds. street paving to Cleveland Trinidad Paving Co. of Cleveland, O.; Southern Paving Construction Co., Chattanooga, Tenn., and Standard Paving & Construction Co., New Orleans, La. (Supersedes recent item.)  
Tex., El Paso.—El Paso County Commrs. let contract Lee Moor Contracting Co., El Paso, at \$106,323 to pave Upper Valley Rd. from Borderland Inn to State line at Anthony, N. M.  
Tex., El Paso.—City contemplates paving East Boulevard from Cotton to Piedras St., estimated cost \$55,306.50; Jas. Gladding, City Engr., to prepare estimates of cost of paving Texas St. from Alameda to Piedras, Davis St. from Improvement Dist. No. 1 to West Overland, South Station St. from 8th to 6th, and Ange Sts. from Missouri to Hugh.  
Tex., Fort Worth.—City will pave Main St. from Weatherford to Front St.; creosoted wood block, vitrified brick, etc.; bids until June 6; F. J. Von Zuben, City Engr. (See Machinery Wanted—Paving.)  
Tex., Hempstead.—Waller county, Road Dist. No. 1, votes June 22 on \$25,000 bonds to improve roads. Address County Commrs.  
Tex., Hillsboro.—City let contract Southern Paving Co., Dallas, to pave Franklin St. with asphaltic concrete; F. C. Metzger, City Engr.  
Tex., Hillsboro.—Hill county, Hubbard Dist., defeated bonds to construct roads. (Noted in April.)  
Tex., Houston.—Harris County Commrs. let contract to Lakeside Rice Milling Co., Lakeside, Tex., at \$21,600 to furnish material and to Couch & Holliger at \$15,511.60 for road construction, Chocolate Bayou Rd. (Bids lately noted as one of four contracts.)  
Tex., Huntsville.—Walker county, Road Dist. No. 1, issued \$50,000 bonds to construct roads. Address County Commrs.  
Tex., Liberty.—Liberty County Commrs. authorized issuance of \$60,000 road warrants for road construction in 4 precincts.  
Tex., Lipscomb.—Lipscomb County Commrs. will issue \$75,000 bonds for road improvements.

Tex., Wichita Falls.—City voted \$40,000 bonds for street paving; concrete construction; let contract I. H. Roberts, Wichita Falls; L. C. Hinckley, City Engr. (Noted in Apr. as to vote.)  
Va., Eastville.—Northampton County, Eastville Dist., W. L. Dalby, Secy. Road Board, let contract to J. G. Davis & Co., Independence, Va., to construct 9 mi. sand-clay road; \$20,000 available; Mack Galbreath, Engr., Eastville. (Bids lately noted.)  
Va., Gate City.—Scott county, Floyd Dist., will improve 16 mi. road; \$43,900 available; date of opening bids not set; Engr., E. V. St. Martin, Gate City; F. B. Horn, Supvr., Dunganon, Va. (Bonds lately noted voted.)  
Va., Gate City.—Scott county, Estelville Dist., voted \$70,000 bonds to macadamize 30 mi. road. Address County Commrs.  
Va., Gate City.—Scott county, Taylor Dist., will vote June 29 on \$80,000 bonds for road construction. Address County Commrs.  
Va., Princess Anne.—Princess Anne county, Kempsville Dist., voted \$130,000 bonds to improve 3 principal roads—Broad Creek, Walter-Works and Indian River Rds. Address County Commrs. (Noted in March.)  
Va., Prince George.—Prince George County Supvrs. let contract Clay & Co. to build 2 mi. gravel road on Jerusalem Plank Rd. (Call for bids lately noted.)  
Va., Port Norfolk.—Com. of Roads and Bridges, R. B. Preston, Road Engr., 401 Commercial Bldg., invites bids until June 6 to construct 5000 sq. yds. concrete sidewalks. (See Machinery Wanted—Paving.)  
Va., Portsmouth.—Norfolk county will improve 3.42 mi. of road between Armstead Siding and Churchland; bituminous surface treatment, bituminous penetration macadam or concrete; Com. for Purchase and Improvement of Roads receives bids until June 2; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Road Construction.)  
Va., Richmond.—City will pave 5th St. from Main to Cary St. with granite spall or asphaltic concrete paving; bids until May 31; Chas. E. Bolling, City Engr. (See Machinery Wanted—Paving.)  
Va., South Boston.—City let contract R. M. Hudson Co., Concord, N. C., for 15,000 sq. yds. sheet-asphalt pavement; includes grading, granite curbs, concrete gutters and storm drains; Anderson & Christie, Consult. Engrs., Charlotte, N. C. (Noted in May as receiving bids until May 25.)  
Va., West Point.—City voted \$30,000 bonds for paving and to extend water and sewer systems; H. Anderson, Mayor. (Lately noted to vote.)  
W. Va., Clarksburg.—Harrison county, Simpson Dist., votes June 29 on \$200,000 bonds to construct 30.63 mi. roads. Address County Commrs. (Lately noted.)  
W. Va., Elkins.—Randolph county will vote July 1 on bonds for road construction; Thaddeus Pritt, Clerk.  
W. Va., Fairmont.—Marion County, Grant Dist., postponed election to vote on \$195,000 bonds to construct roads from May 23 (lately noted) to some date in June. Address County Commrs.  
W. Va., Fayetteville.—Fayette county, Fayetteville Dist., voted \$600,000 bonds to construct roads with asphaltic brick, concrete, macadam, stone block or other material; R. J. Stegall, Clerk County Court. (Noted in April.)  
W. Va., Fayetteville.—Fayette county, Nuttall Dist., voted \$100,000 bonds to construct roads; R. J. Stegall, Clerk County Court. (Noted in April.)  
W. Va., Fayetteville.—Fayette county, Falls Dist., voted \$175,000 bonds to construct roads with asphaltic brick, concrete, macadam, stone block or other material; R. J. Stegall, Clerk County Court. (Noted in April.)  
W. Va., Martinsburg.—City votes June 6 on \$150,000 bonds to pave streets; contemplates brick, asphalt and macadam paving; E. D. Bromley, official in charge. (Lately noted.)  
W. Va., Moundsville.—Marshall County Commrs. let contract Stringer & Stringer, Martins Ferry, O., to improve Boggs Run, McMechen Hill and other roads in Union Dist.; total, 36,040 lln. ft.; T. J. Bartrug, Engr., Room 6 Alexander Bldg., Moundsville; J. E. Chase, County Clerk. (Call for bids lately noted.)  
W. Va., Spencer.—Roane county voted \$208,000 bonds to construct 16 1/2 mi. of road from Spencer to Kanawha county line. (Lately noted.)

SEWER CONSTRUCTION

Ark., McGehee.—City will construct sewer system. Address The Mayor.  
Fla., Miami.—City, W. B. Moore, City Clerk, will construct section 2 of Storm Sewer Dists. 1 and 2; about 6445 ft. 12, 15, 18, 22 and 24-ft. vitrified pipe and 2442 ft. concrete sewer, etc.; bids until June 15. (See Machinery Wanted—Sewer Construction.)  
Ga., Macon.—City let contract H. B. Hoppendtelz at \$1920.25 to construct sanitary sewer on Broadway.  
Md., Midland.—City will issue \$5000 bonds to construct sewers and grade and pave streets and alleys. Address The Mayor.  
Miss., Laurel.—City will construct 2000 ft. sewers in Windham addition. Address The Mayor.  
Miss., McComb.—City, O. B. Quinn, Mayor, will construct sanitary sewer system and sewage-disposal plant; bids until June 30; plans and specifications on file at office City Clerk and Xavier A. Kramer, Engr., Magnolia, Miss.; specifications, etc., upon application to Engr.; city voted in April to issue \$90,000 bonds, etc. (See Machinery Wanted—Sewer Construction.)  
Mo., Cartersville.—City will construct 5-in. tile sewer in Dist. No. 10; cost \$2211.90; open construction bids June 1; lately noted; Frank Newton, Engr., Carthage, Mo.; A. M. Blair, Clerk. (See Machinery Wanted—Sewer Construction.)  
Mo., Maryville.—City contemplates building sewage-disposal plant and septic tank. Address The Mayor.  
Mo., Stanberry.—City has plans for sewer system; cost \$25,000; Black & Veatch, Engrs., Inter-State Bldg., Kansas City, Mo.  
N. C., Durham.—City let contract Obenshain Construction Corp., Roanoke, Va., at \$24,029.60 to construct outfall sewer line; 6 1/2 mi. 24-in. terra-cotta pipe and 4 mi. 10-in. sewer; Gilbert C. White, Consult. Engr., Charlotte and Durham; H. Keuffner, City Engr. (Call for bids lately noted.)  
N. C., Fremont.—City, F. B. Aycock, Mayor, defeated bonds for sewer construction. (Lately noted.)  
N. C., Winston-Salem.—City contemplates issuing \$30,000 notes to extend sewer system. Address The Mayor.  
Tex., Coleman.—City retained Henry E. Elrod, Southwestern Life Bldg., Dallas, Tex., as Consult. Engr. for proposed purchase and extension of privately-owned sewer system.  
Tex., Fort Worth.—City will construct storm sewer drainage system on Main St. from Weatherford to Front St.; 538 lln. ft. 24-in. vitrified pipe, 497 lln. ft. 18-in. pipe, etc.; bids until June 6; F. J. Von Zuben, City Engr. (See Machinery Wanted—Sewer Construction.)  
Tex., Hillsboro.—City retained Henry E. Elrod, Engr., Southwestern Life Bldg., Dallas, Tex., to consult with City Engr. relative to proposed sewage-disposal plant. (In April city noted contemplating plant of 250,000 gals. capacity.)  
Tex., Mineral Wells.—City voted \$23,000 bonds to extend sewers and build disposal plant. Address The Mayor.  
Tex., Paris.—City has plans and specifications for construction sewage-disposal plant; activated sludge method; estimated cost, \$10,000; plans, etc., by R. G. Tyler, City Engr. (Lately noted voting bonds.)  
Tex., Tyler.—City's Consulting Engineer, Henry Exall Elrod, Southwestern Life Bldg., Dallas, Tex., advises that city has not acquired a privately-owned sewer plant nor employed sewer engineer. (Lately noted.)  
Va., Richmond.—City will construct sewers and drains; bids until May 31; Chas. E. Bolling, City Engr. (See Machinery Wanted—Sewer Construction.)  
Va., West Point.—City voted \$30,000 bonds to extend sewer and water systems and for paving; H. Anderson, Mayor. (Lately noted to vote.)

TELEPHONE SYSTEMS

Ky., Longan.—Longan Telephone Co. incorporated by E. B. McDaniel, Geo. R. Heron and David Asher.  
Ky., Pleasant Grove.—Pleasant Grove Telephone Co. inceptd. by O. C. Kennedy, W. P. Walker and T. P. Liles.  
N. C., Rural Hall.—Rural Hall Telephone Co., capital \$10,000, inceptd. by M. J. Peddicord, L. I. Stanber and W. E. Stanber.  
Tenn., Gallatin.—Cumberland Telephone & Telegraph Co. (main office, Louisville, Ky.) will erect telephone exchange; cost \$35,000.

Tex., Bandera.—Bandera Independent Telephone Co. increased capital from \$1500 to \$5000; will build line to Center Point.

Tex., Morris Branch.—Riverside Telephone Co., capital \$3675, inceptd. by August Rabke, John P. Weber and Wm. Lott.

### TEXTILE MILLS

Ga., Atlanta—Bleachery and Dyeing Plant.—T. J. McNamara of Lanett, Ala., is negotiating for site on which to build bleachery and dye works costing \$10,000 to \$20,000.

Ga., Jefferson.—Cotton Goods.—Jefferson Cotton Mills purchased by W. T. Bryan, Athens, Ga.; possession July 1; plans to double capacity for production; has 5000 spindles, 174 looms, etc.; adopt electric drive (electricity from Athens Ry. & Electric Co.), displacing steam engine; build weave shed, displacing present looms to provide space for added spinning machinery; will survey property and obtain engineering data for determining details.

N. C., Burlington.—Cotton Cloth.—Jas. N. Williamson & Sons Co. will build additions to Ossipee Cotton Mills and Hopedale Cotton Mills; add 5000 spindles and 150 looms; ordered this new machinery; awarded building contracts; cost \$150,000 to \$200,000. (Supersedes May report stating Ossipee and Hopedale mills will each add 10,000 spindles.)

N. C., Cliffside.—Cotton Goods.—Lakeview Mills, capital \$200,000, inceptd. by R. R. Haynes and others.

N. C., Rockingham.—Cotton Cloth.—Steele's Mills let contract T. C. Thompson & Bros., Charlotte, N. C., to construct 300x175-ft. weave shed; Dallis-Robert Co., Atlanta, Ga., Archt.-Engr. in charge; Engr.-Archit., Atlanta, Ga. (Dallis-Robert Co.) noted in May as advising Manufacturers Record as follows: Improvements contemplate reorganization of machinery in present building, addition of 17,000 spindles, and building weave shed and clothroom for 1000 looms; weave shed 300x175 ft.; clothroom 175x59 ft.; slow-burning mill construction; monitor roof lighting; all shafting in basement; plans and specifications being prepared.

N. C., Gastonia.—Cotton Yarn.—Groves Mills will erect 2-story building; 510x78 on first floor; 290x78 on second floor; install 11,068 spindles; later increase to 15,000; electric power; electricity from Gastonia transmission system of Southern Power Co., Charlotte, N. C.; spin fine combed yarns. (Lately noted organized, etc., capital \$250,000.)

N. C., Gastonia.—Cotton Yarn.—Seminole Cotton Mills Co. let contract for 317x125-ft. mill-construction building; install 10,000 spindles, electric power drive, etc.; purchased this machinery. (Lately noted organized, etc.)

N. C., Lumberton.—Hosiery Yarns.—Lumberton Cotton Mill will build 100x80-ft. addition; has let contract; install twistlers to serve 5000 spinning spindles; ordered this machinery. (Supersedes recent item.)

N. C., Mt. Holly.—Combed Yarns.—Adrian Mfg. Co., organized; C. E. Hutchinson, Prest.-Treas.; I. C. Lowe, V. P.; J. W. Holland, Secy.; will build 2-story 310x78-ft. mill; install 13,056 producing spindles to spin combed yarn; electric power; has let contract for textile machinery, electrical equipment, humidifying system, etc.; R. C. Biberstein, Engr.-Archit., Charlotte, N. C. (Noted in Mch. as inceptd. with \$300,000 capital, etc.)

N. C., Newbern.—Cotton Goods.—Chamber of Commerce is promoting organization of company to build cotton mill; building probably 1 story, of brick and concrete; initial installation, 6000 spindles.

N. C., Rocky Mount.—Cotton Yarn.—Rocky Mount Mills will build 2-story 80-ft. addition; equip with new opening, carding and spinning machinery; replace old-type spinning frames with new equipment; improve water-power plant by deepening and enlarging tail race; expend \$100,000.

N. C., Winston-Salem.—Underwear.—Maline Mills will add 7 knitting machines and 19 sewing machines; cost \$6000; contracts awarded. (Noted in April as awarding contract for 2-story 75x10-ft. fireproof addition costing \$1000.)

S. C., Greers.—Cotton Goods.—Victor Mfg. Co. meets June 28 to consider increasing authorized capital from \$2,631,600 to \$7,000,000 and changing name to Victor-Monaghan Mills.

Tex., Austin.—Silk.—Austin Silk Plantation & Mfg. Co. organized; Sam Sparks, Bus. Mgr.; V. K. Osgilan, Mgr. of silk production; leased 40 acres; planted 12,000 mulberry trees for feeding silkworms; proposes planting 60,000 cuttings to increase stock of trees for 1917; silk development to be fol-

lowed eventually by construction of mill. (Previously noted organized, etc., \$12,500 capital.)

W. Va., Martinsburg.—Woolen Cloth.—Berkeley Woolen Co. advises Manufacturers Record: Will build boiler-house addition and install two 150 H. P. return-tubular Dutch-oven type boilers; contracts awarded; contemplate other additions and improvements which will not mature before spring of 1917.

### WATER-WORKS

Ark., Mayvell.—Town is prepared to grant franchise for water and light plant; 1000 population. Address J. M. Farrar. (See Machinery Wanted—Electric-light and Water Plant.)

Ga., Dublin.—City votes July 24 on \$30,000 bonds to construct and equip filter plant; W. W. Robinson, Mayor. (Lately noted as contemplating bond issue.)

Mo., Jefferson City.—The Water Co. let contract to U. S. Wind Engine & Pump Co., Batavia, Ill., for elevated storage tank of 65,000 gals. capacity, 100 ft. high; Chester & Fleming, Hydraulic Engrs., Pittsburgh, Pa., prepared plans and supervise construction.

Mo., Princeton.—City, J. A. Lienallen, Clerk, will expend \$12,500 to improve water-works, etc.; contemplates concrete lining of reservoir, filter system, building \$1000 engine-room, installation of engine, boiler, etc. (Bonds lately noted voted to improve water-works and electric-light system.)

N. C., Fremont.—City, F. B. Aycock, Mayor, defeated bonds for water-works. (Lately noted.)

N. C., Lumberton.—City, Ira B. Townsend, Clk. and Treas., voted \$30,000 bonds for water and light improvement; will install filter.

Okl., Duncan.—City contemplates constructing water system; E. W. Mitchell, City Clerk.

Okl., Kendall.—City defeated \$30,000 bonds to construct water-works; Geo. H. Coe, Town Clerk. (Lately noted.)

S. C., Camden.—City contemplates voting on \$18,000 bonds to construct water works. Address The Mayor.

Tenn., Niota.—Niota Water Co., increased capital from \$2000 to \$5000 and changed name to Niota Water, Light & Power Co.

Tenn., Tazewell.—Tazewell Water Co., capital \$10,000, inceptd. by M. B. Carr, W. C. Parkey, J. A. Day and others.

Tex., Crowell.—City engaged M. Griffin O'Neil & Sons, Dallas, as engineers for water-works; cost \$18,000; W. B. McCormick, City Secy. (Lately noted to have voted bonds.)

Va., West Point.—City voted \$30,000 bonds to extend water and sewer systems and for paving; H. Anderson, Mayor. (Lately noted to vote.)

### WOODWORKING PLANTS

Ark., Thornton.—Crates.—Rockwell Mfg. Co., Camden, Ark., is reported as contemplating erection of branch crate factory.

Ga., Talbotton.—Coffins, Caskets, Builders' Supplies.—Talbotton Coffin, Casket & Mfg. Co. (lately noted inceptd., capital \$15,000, by J. W. Jordan and others) will erect 40x100-ft. ordinary construction building; install equipment, cost \$8000, for manufacture of coffins, caskets and builders' supplies. (See Machinery Wanted—Woodworking (Planning Mill, Coffin and Casket) Machinery.)

Miss., Lumberton.—Veneer.—Lumberton Mfg. Co. inceptd., capital \$10,000; J. W. Williams, Prest.; A. S. Hinton, V. P.; R. W. Hinton, Jr., Secy.; J. J. Grambling, Mgr.; manufactures gum veneer for box shooks and furniture; mill equipped.

Mo., Kansas City.—Office and Store Fixtures, etc.—G. W. Whitcomb, Bellefontaine and Twelfth Sts., will build 12x50 ft. factory; concrete and mill construction; cement floor, tarred roof; steam heating plant; electric lighting plant; also build boiler-house and drykiln; install machinery to manufacture bank and other office fixtures, store fixtures and showcases.

N. C., Hickory.—Mill Spools.—Ivey Manufacturing Co. may install machinery to manufacture spools for textile mills. (See Machinery Wanted—Woodworking (Spool Equipment).)

N. C., Roe.—Handles.—J. T. Davis will build hickory handle factory.

Tenn., Knoxville.—Boxes, Shooks and Crates, etc.—American Box & Crate Co., Thos. V. Boardman, Prest., 602 Empire Bldg., purchased plant of Knoxville Basket & Crate Co., including mill and equipment, timber and lands; will continue manufac-

ture of baskets, crates, boxes, box shooks, shipping and delivery crates, etc.

Va., Capron.—Boxes.—Capron Box Co. chartered with \$25,000 capital; W. H. Vincent, Prest.; C. P. Vincent, V. P. and Mgr.; Geo. Lankford, Secy.; succeeds G. W. Truitt & Co.; 120x60-ft. mill-construction building, equipped with box machinery costing \$10,000.

### FIRE DAMAGE

Ark., Magnolia.—D. G. Emerson's residence.

Ark., Moark.—Residence of Jos. Nimnech and E. Ermit; loss \$5000.

Fla., Jacksonville.—Residences of R. N. Ewing and Paul Morris; loss \$7000.

Fla., Winter Haven.—Wayside Inn; Foley & Ricker's offices; Adams Printing Co.'s establishment; loss \$6500.

Ga., Lafayette.—Lafayette Bottling Works; loss \$10,000.

Ga., Lyons.—J. McMann's residence; loss \$5000.

Ga., Rochelle.—W. B. Owens' residence; loss \$15,000.

Ga., Stillmore.—Hotel owned by W. J. Evans and operated by Mrs. J. R. Smith, loss \$4000; E. A. Edenfield's building, loss \$10,000.

Ga., Tallapoosa.—Bob Junior's gin.

Ga., Thomasville.—T. A. Patterson's turpentine still.

Ga., Waycross.—J. C. Turner Co.'s lumber plant; loss \$30,000 to \$40,000.

Ky., Cloverport.—W. L. Arnold's bakery and confectionery.

Ky., Louisville.—F. Cosby's store and residence; loss \$3000.

Ky., Mt. Sterling.—Scott Judy's residence; loss \$10,000.

Ky., Prestonburg.—Bank-Josephine Bldg., loss \$27,000; Oliver Tumbo's residence; Hines' barber shop; Newt Harris' store;

hotel owned by James Clark; total loss, \$50,000.

Ky., Ravenna.—Ravenna Hotel, owned by S. F. McGuire; loss \$3600.

La., Monroe.—C. E. Bynum's 5 residences; Mrs. M. A. McCoy's 2 residences; loss \$10,000.

La., New Orleans.—Destitute Orphan Boys' Home, Valmont and Charles Sts.; loss \$100,000.

La., Thibodaux.—St. Joseph's Catholic Church, Rev. A. M. Barbier, pastor; loss \$50,000.

Md., Annapolis.—Mrs. Bella Abell Armstrong's residence; loss \$8000.

Miss., Meridian.—Thomas Avery's residence, Carl Rudder's residence; Geo. Hayes' residence; loss \$7000 to \$10,000.

Miss., Shubuta.—Shubuta Oil & Mfg. Co.'s cottonseed-oil mill and gin; loss \$10,000.

Mo., Joplin.—E. A. and Frank Mattes' concentrating plant at Jackson Station; loss \$60,000; offices at Joplin, Mo.

S. C., Winnsboro.—Residence of F. A. Des Portes and U. G. DesPortes, Jr.; loss \$15,000.

Tex., Bangs.—Rock Hotel; owned by Mrs. W. F. Page, loss \$10,000.

Tex., Beaumont.—Pollard School; H. B. Funchess, Chrmn. Bldg. Com. School Board; loss \$7000.

Tex., Bonham.—G. W. Clayton's gin; loss \$8000.

Tex., Coleman.—Rogers Milling Co.'s plant; loss \$25,000.

Tex., Denton.—Good Transfer Co.'s barn, loss \$9000; W. J. Wagoner's store.

Tex., Sherman.—Eugene Cherry's residence; loss \$6000.

Tex., Waxahachie.—Southland Cotton Oil Co.'s plant; loss \$75,000.

Tex., Wichita Falls.—Acme Laundry; loss \$18,000.

Va., Fincastle.—Mrs. Henry M. Lewis' building; loss \$6000.

W. Va., Union.—C. W. Gillman's residence.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### APARTMENT-HOUSES

Fla., Miami.—Geo. Emerick and T. O. Wilson will erect apartment-house: 2 or 3 stories; 60x65 ft.; 3 stores and 19 apartments; cost \$7000 to \$8000.

Fla., Miami.—David Afremow will erect store and apartment building. (See Stores.)

Miss., Corinth.—R. L. Story is receiving bids to erect 2-story apartment building; 2 apartments of 5 rooms on both floors; alternate bids on brick or frame construction.

Mo., Kansas City.—Frank Henderson will erect 2-story 6-apartment flat at 613-15 W. 39th St.; cost \$16,000.

Mo., Kansas City.—E. Jones will erect 3-story apartment-house; cost \$10,000.

Mo., Kansas City.—McCanles Realty Co. will erect nine 3-story 6-apartment flats 2731-57 Benton St., 2909-11 Lockridge Ave., 2910-12 E. 28th St.; cost \$169,000.

Mo., St. Louis.—F. J. Cornwell will erect 2 apartment-houses at 4900 W. Pine St.; 55x63 ft.; fireproof; composition roof; slab floors; steam heat; cost \$37,000 each; plans and construction by owner. (Lately noted.)

Okl., Oklahoma City.—L. M. Rauch will erect store and apartment building. (See Stores.)

Tenn., Memphis.—Hugh L. Wynne will erect 2-story 12-room brick-veneer apartment-house; cost \$7500.

Va., Richmond.—H. H. Development Co., P. O. Box 882, Norfolk Va., will erect 2 apartment-houses 67x129 ft. and 65x115 ft.; brick; oak and pine floors; cost \$80,000; steam heat, \$8000; gas and electric lights, \$2100; plans and construction by owner. (Lately noted.)

#### ASSOCIATION AND FRATERNAL

Ala., Gadsden.—Gadsden Lodge No. 236, Coosa Chapter No. 86, Etowah Commandery No. 15 and Queen City Chapter No. 135, Eastern Star, are considering erecting Masonic Temple on 6th and Chestnut Sts.; cost \$10,000; Dr. H. L. Ison, E. D. Williams and A. D. Simpson, Bldg. Com.

Ark., Jonesboro.—A. F. and A. M. will improve Masonic Temple.

Fla., Miami.—Y. M. C. A., receives competitive plans until June 6 for building; about 55x130 ft.; 4 stories and basement; re-

inforced concrete or face brick; concrete basement floors; tile floors in lobby; other floors, pine; cost \$100,000; plans ready for bids about Sept.; Address Wm. S. Frost, Secy. (Lately noted.)

Ga., Augusta.—Y. W. C. A., Mrs. C. H. Phinley, Prest., will erect gymnasium, swimming pool, etc.

Ky., Corbin.—Louisville & Nashville Ry. Y. M. C. A., A. D. Murrell, Gen. Secy., plans to erect building to replace burned structure; cost \$30,000.

Mo., Joplin.—I. O. O. F., Henry Phelps, Chrmn. Building Comm., has plans by C. H. Sudholter Co., 2 W. Ninth St., Joplin, for lodge and business building; bids opened May 21; separate bids for plumbing, sewer- ing and electric wiring.

N. C., King.—Junior Order United American Mechanics will erect 2-story store and lodge building.

Tex., Uvalde.—A. F. and A. M. will erect business and lodge building.

Tex., Waco.—Missouri, Kansas & Texas Ry., Leon F. Lounbladh, Ch. Engr., Dallas, will erect frame Y. M. C. A. building; cost \$4500; construction by company's force. (Lately noted.)

Tex., Wellington.—E. W. Cocke will remodel building for lodgerooms, etc. (See Bank & Office.)

#### BANK AND OFFICE

Md., Brooklyn.—Baltimore Car & Foundry Co. will erect office building on Curtis Ave.; 2 stories; brick.

Okl., Altus.—F. B. Jones and J. W. Richardson will erect 50-ft. building.

S. C., Anderson.—Fred B. Maxwell, Guardian, has plans for store and office building. (See Stores.)

Tenn., Chattanooga.—Volunteer State Life Insurance Co., James Bldg., has plans by Barnwell & Barnwell, 516 Hamilton National Bank Bldg., Chattanooga, and lets contract June 15 to erect building; 12 stories and basement; fireproof; tar and gravel roof; reinforced concrete; 94x136 ft.; vitreous-brick exterior except first and second floors and cornice, which are terracotta; wood floors except marble corridor floors; 4 passenger and 1 freight elevator; lower floor stores; cost \$400,000. (Noted in



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March to have let contract to Southern Ferro-Concrete Co., Atlanta, for reinforced concrete frame.)

Tenn., Nashville.—J. O. Leake and others receive bids about June 2 to erect 5-story store and doctors' office building; first floor for stores; others for doctors' suites; high-speed elevator; cost \$85,000; Marr & Holman, Architects, Nashville.

Tenn., Nashville.—Mayberry Realty Co. receives bids until June 5 to erect 3-story office building 232-46 2d St.; 68 offices; brick and terra-cotta; steam heat; vacuum cleaner; ceiling fans; elevator; marble and tile lobby; Thos. W. Gardner, Archt.; Edward E. Dougherty, Asso. Archt., Nashville.

Tex., Colorado.—City National Bank is having plans prepared by David S. Castle, Abilene, Tex., for bank building previously noted; 2 stories; cost \$12,000 to \$15,000; C. H. Laskey is also having plans prepared by same architect for three 1-story buildings; C. H. Earnest also having plans prepared by Mr. Castle for business building 100x140 ft.; to be occupied by Adams Mercantile Co.; cost \$16,000; bids received on 3 buildings jointly about June 15.

Tex., Wellington.—E. W. Cocke plans to erect addition to and remodel City National Bank Bldg.; lower floor for offices, upper floor, lodgerooms.

### CHURCHES

Ala., Ensley.—Ensley Highlands Methodist Church will erect addition to building. Address The Pastor.

Fla., Miami.—First Christian Church is having plans prepared by A. E. Lewis, Miami, for building; reinforced concrete; stucco finish; cost \$25,000 complete. (Previously noted.)

Fla., Valrico.—First Baptist Church will erect concrete structure; D. L. Bandon, T. L. Fontaine and Mark Brandon, Trustees; Kay Howell, Valrico, has contract for cement blocks.

Ky., Providence.—First Baptist Church will erect building; cost \$12,000 to \$15,000; work begins by June 15. Address The Pastor.

Ky., Providence.—Methodist Church will erect building; cost \$10,000 to \$12,000. Address The Pastor.

La., Thibodaux.—St. Joseph's Catholic Church, Rev. A. M. Barbier, Pastor, will rebuild structure noted damaged by fire at loss of \$50,000.

Miss., Friar Point.—Methodist Church has plans by Hubert T. McGee, 1505 Tennessee Trust Bldg., Memphis, Tenn., for building; brick; stone trimmings; tile roof; furnace or hot-air heat; electric lights; cost \$5,000. Address R. B. Hebdon. (Lately noted.)

Miss., Richton.—Presbyterian church will erect building; brick and frame; cost \$6,000; C. P. Craft, Archt., Ellisville, Miss.

N. C., Durham.—Yates Baptist Church, on Chapel Hill Rd., will erect building; cost \$20,000; Rev. L. H. Hobbs, Pastor.

N. C., Wadesboro.—Methodist Church will improve building and erect Sunday-school addition. Address The Pastor.

Okl., Bristow.—Methodist church will erect brick building; cost \$12,500. Address The Pastor.

Okl., Heavener.—Baptist Church, J. M. Young, Corresponding Secy., will erect building; brick, shingle roof; lumber floors; steam heat; electric lights; cost \$10,000. Address Mr. Young. (Lately noted.)

Okl., Purcell.—Methodist Episcopal Church will erect building; 42x77 ft.; brick; inclined floors; hot-air or steam heat; electric lights; cost \$8,000; bids opened and construction begun in June. Address Rev. T. G. Peterson, Pastor. (Lately noted.)

S. C., Greenville.—Palmer Presbyterian Church, Dr. G. O. Griffin, pastor, will erect building; cost about \$15,000.

Tex., Galveston.—First Methodist Church has plans by C. D. Hill & Co., Galveston, for addition to building; 40x60 ft.; 2 stories; ordinary construction; composition roof; cost \$7,000. (Lately noted.)

### CITY AND COUNTY

Ala., Anniston.—City will erect \$20,000 Carnegie Library; will soon let contract. Address The Mayor.

Ark., Little Rock.—Fire Station.—Board of Public Affairs, Fletcher Chenaunt, Clerk, receives bids until June 7 to erect fire station, Beach St. and Prospect Ave.; brick and stucco; 2 stories; tile roof; concrete floors; hot water heat; plans and specifications at office Thomas Harding, Archt., 825 Southern Trust Bldg., Little Rock.

Fla., Pompano.—Town Hall and Jail.—Town will have plans prepared by A. E.

Lewis, Miami, Fla., for town hall and jail; concrete block.

Ga., Macon.—Comfort Station.—City is having plans prepared by Chas. Jones, Building Inspector, for public comfort station at Broadway and Mulberry St.

Miss., Gulfport.—Library.—City will erect Carnegie Library; cost \$10,000; Geo. M. Foote, Mayor.

S. C., Greenwood.—Library.—City will erect \$15,000 Carnegie Library. Address The Mayor. (Previously noted.)

### COURTHOUSES

Ark., Greenwood.—County will erect \$60,000 courthouse; plans by A. Klingsmith, Fort Smith, Ark.; C. Rice Owens and W. C. Stanfill, Commrs. in charge.

N. C., Mocksville.—Davie County Commrs. receive bids through M. C. James, Chrmn., until June 12 (extended date) to repair and reconstruct courthouse; 2 stories; fireproof; composition roof; plans and specifications at office J. S. Daniel, Register of Deeds, Mocksville, and Raleigh James Hughes, Archt., Greensboro, N. C. (Lately noted.)

### DWELLINGS

Ala., Gadsden.—Chas. O. Duncan will erect 7-room bungalow.

Ark., Althelmer.—T. M. Phillips will erect \$10,000 residence to replace burned structure.

Ark., Van Buren.—P. D. Scott will erect 14 tenant-houses near smelter.

Fla., Deer Park.—Hopkins & Kempfer will erect residences.

Fla., Jacksonville.—C. Brinkley has plans by O. B. Abilke, Jacksonville, for 2 dwellings; 24x28 ft., exclusive of porches; brick and shingle veneer; metal roof; hardwood and pine floors; electric lights; tile sidewalks; cost \$5,000; construction by owner. (Lately noted.)

Fla., Lakeland.—Fred S. Duff has plans by Bryan & Poter, Room 8 Ellison Bldg., Lakeland, for dwelling; 54x65 ft.; mill construction; asbestos shingle roof; electric lights; cost \$5,000; steam heat, about \$1,000; bids opened about June 10.

Fla., Miami.—Lawrence Estate Land Co., J. R. Tatum, local agent, will erect 20 bungalows in Riverside Heights in addition to those previously noted; bid received in a few days.

Fla., St. Petersburg.—T. J. Wilcox will erect residence in Lake Vista subdivision.

Fla., St. Petersburg.—T. E. Moncrief will erect bungalow in Hall subdivision; 1 story; 5 rooms.

Fla., St. Petersburg.—Edgar Baume, 1301 Wells Bldg., Milwaukee, Wis., will remodel suburban dwelling for residence; probably erect residence later.

Ga., Atlanta.—Mrs. T. B. Dillard is having plans prepared by P. Thornton Marye, Atlanta, for residence.

Ga., Atlanta.—J. S. and C. R. Collins will erect dwelling; 1 story; brick veneer; cost \$4,000.

Ga., Atlanta.—H. B. Schumpert will erect residence; 7 rooms; 2 stories; brick veneer; cost \$5,000.

Ga., Atlanta.—Dr. A. M. Muckenfuss will erect 2-story brick-veneer residence; 9 rooms; cost \$5,000.

Ga., Atlanta.—Arthur Tufts, Candler annex, is reported to erect residence in DeKalb county.

Ga., Atlanta.—T. B. Dillard is having plans prepared by P. Thornton Marye, Atlanta, for residence; Italian villa style; cost \$35,000.

Ga., Augusta.—Mrs. Gordon Lambark will erect residence; cost \$15,000 to \$20,000.

Ga., Augusta.—Paul Mustin will erect residence.

Ga., Augusta.—Dr. T. L. Davis, C. E. Dunbar and Miss Mary Cuthbert will erect 3 residences to cost \$8,000 to \$10,000 each.

Ga., Augusta.—Mrs. H. H. Jones has plans by P. P. Scruggs, 82½ Broad St., Augusta, for residence and garage; brick; tile roof; cost \$12,000 to \$15,000.

Ga., Augusta.—Mrs. Harry H. Jones has plans by Philander P. Scruggs, Augusta, for residence and garage; tapestry brick; hot-water heat; Spanish tile roof; plumbing and electric work; cost \$9,000.

Ga., Columbus.—John M. Murrah will erect residence; 2 stories; frame; metal roof; cost \$5,000.

Ga., Milledgeville.—Miller S. Bell has plans by Alexander Blair, Georgia Casualty Bldg., Macon, Ga., to remodel residence; colonial style.

Ga., Savannah.—E. W. Rosenthal is having plans prepared for residence; cost \$12,000.

Ga., Savannah.—G. F. Armstrong of Walker-Armstrong Co. will expend \$25,000 to remodel residence; Italian villa style; white stucco or brick; 3 stories; bath on each floor.

Ky., Lexington.—E. S. Miles will erect 2-story 10-room brick residence; cost \$5,000.

Ky., Lexington.—Mrs. Leslie Cleveland will erect 2-story 7-room brick residence; cost \$3,500.

Ky., Lexington.—Mrs. Hulda Kelley will erect residence; 2 stories; 7 rooms; stucco; cost \$3,800.

Ky., Winchester.—Rev. B. Crump will erect residence at 26 Mt. Vernon Pl.

La., New Orleans.—Interstate Land Co. will erect bungalow on State Street Drive.

La., New Orleans.—E. W. Leche will erect 1-story residence; cost \$3,000.

La., New Orleans.—H. A. Ferrandou will erect 2-story residence; cost \$6,000.

La., New Orleans.—L. Roseman will erect 2 double 2-story residences; cost \$6,000.

La., New Orleans.—M. Sazer will erect 2 double 2-story residences; cost \$4,500.

La., New Orleans.—L. Monson will erect 2 double cottages; cost \$3,000.

Md., Baltimore.—Jos. K. Shriver, 523 S. Sharp St., will erect two 2-story and attic cottages.

Md., Baltimore.—Geo. E. Rosenbrock, 1814 Keyworth Ave., will erect 4 residences on Towanda Ave.; 2 stories; brick; 14x45 ft.; cost \$6,000; Harry R. Smart, Archt. (Lately noted.)

Md., Baltimore.—Jere Walter Lord is having plans prepared by Laurence Hall Fowler, 347 N. Charles St., Baltimore, for residence at Guilford. (Lately noted.)

Md., Baltimore.—Frank Novak, Madison St. and Kenwood Ave., has plans by Callis & Callis, 2355 Kennedy Ave., Baltimore, for 8 dwellings on Montebello Drive; 15x51 ft.; brick; tin roofs; wood floors; steam heat; electric lights; cement sidewalks; cost \$2,000 each; construction by owner. (Lately noted.)

Md., Baltimore.—Wm. Pepper Constable is having plans prepared by A. Lowther Forrest, Law Bldg., Baltimore, for residence at Guilford; 8 rooms; brick; green slate roof; hardwood floors; hot-water heat; electric lights; bids asked in about a week. (Previously noted.)

Md., Frederick.—Millard N. Nusz will erect two 2-story residences; brick; mansard roof, etc.

Mo., Gallatin.—Chas. Henry has plans by Geo. Fuller Green, 424 Rialto Bldg., Kansas City, Mo., for residence; 28x36 ft.; frame and brick; shingle roof; wood floors; cost \$5,000; hot-water heat, \$500; bids opened June 1. Address owner.

Mo., Kansas City.—Sam Davidson will remodel and erect addition to Rockhill Manor dwelling; cost \$25,000.

Mo., Kansas City.—E. Cope will erect residence; 2 stories; stucco-veneer construction; cost \$3,000.

Mo., Kansas City.—E. E. Hay will erect two 2-story stucco-veneer residences; cost \$4,000.

Mo., Kansas City.—Geo. W. Moore will erect two 1-story frame residences; cost \$3,000.

Mo., Kansas City.—Charles Weill will erect 1-story residence; cost \$3,000.

Mo., Kansas City.—J. C. Nichols will erect three 2-story frame residences; cost \$18,000.

Mo., Kansas City.—Terminal Investment Co. will erect 2-story residence at 5925 Wornall St.; cost \$7,500.

Mo., St. Louis.—Mrs. Irene Mooney will erect residence in Ames Pl.

Mo., St. Louis.—Dr. David F. Doubt will erect 2 bungalows.

Mo., St. Louis.—Richard Weissenborn and O. Kubatzky will erect 10 bungalows on Fairmount Ave.; cost \$6,500 each; plans by Mr. Kubatzky.

N. C., Asheville.—Wallace B. Davis will erect 8-room residence; cost \$6,000.

N. C., Asheville.—J. D. Nelson, R. F. D. No. 1, has plans by T. E. Davis, Asheville, for store building; brick; asbestos roof; wood floors; city lights; cost \$4,000; construction by owner, who may be addressed. (Lately noted.)

N. C., Raleigh.—Dr. Hubert Haywood, Jr., will erect residence; cost \$8,000.

N. C., Greenville.—C. O'H. Horne will erect residence; cost \$5,000.

Okl., Oklahoma City.—Stewart & Wilder will erect 2-story brick veneer residence; cost \$5,000.

Okl., Oklahoma City.—Frank J. Wykoff, Prest. Trademan's State Bank, will erect residence; English type; brick and reinforced concrete; tile roof; cost \$15,000; construction by owner; completion by Oct. 1; Stewart & Wilder, Architects, Oklahoma City.

S. C., Aiken.—Davis Hankinson will erect 15-room residence on Park Ave.

S. C., Greenville.—Charley Klosekier will erect 2 residences on Mills and Lavinia Aves.; cost \$7,500.

S. C., Spartanburg.—Dr. H. R. Black will erect residence.

Tenn., Columbia.—Dr. C. D. Nowlin will erect residence; 40x60 ft.; bungalow style; brick veneer; hardwood finish; slate or slate asphalt roof; hardwood floors; heating and lighting not determined; cost \$400 to \$500; concrete sidewalk and streets, \$100; will let contract early in 1917. (Lately noted.)

Tenn., Memphis.—Kennedy & Graves will erect brick-veneer bungalow; cost \$3,750.

Tenn., Nashville.—G. F. Pfisterer receives bids June 2 to remodel residence; Marr & Holman, Architects, Nashville.

Tenn., Nashville.—Miss Mary L. Olwill, No. 5 S. 5th St., has plans by C. K. Colley, 33-40 Life & Casualty Bldg., Nashville, for residence; 6 rooms; brick; ordinary construction; slate roof; vapor heat; electric lights; cost \$500; bids opened May 27. (Lately noted.)

Tenn., Nashville.—W. P. & J. W. Doyle have plans by C. K. Colley, 33-40 Life & Casualty Bldg., Nashville, for residence; 10 rooms; brick veneer; composition shingle roof; ordinary floor construction; vapor heat; electric lights; cost \$500. (Lately noted to open bids May 27.)

Tex., Bonham.—D. W. Sweeney will erect residence.

Tex., Houston.—Russell Brown Co. will erect dwelling; hollow tile and stucco; cost \$12,000.

Tex., Mexia.—Loman Cox will erect residence.

Tex., Paris.—L. L. Henderson has plans by C. E. Curtis, Paris, for residence; brick veneer and tile; tile roof; cost \$12,000; bids opened in fall.

Tex., San Antonio.—J. C. Harris will erect three 2-story residences; cost \$5,250.

Tex., Sherman.—Eugene Cherry plans to erect residence to replace structure noted damaged by fire; bungalow; white enamel brick; 7 or 8 rooms; concrete and oak floors; tile roof; construction probably begins in fall.

Tex., Waxahachie.—P. A. Chapman will erect residence; cost \$20,000 to \$25,000; plans in progress.

Va., Norfolk.—W. G. Yeates will erect brick and frame residence; cost \$3,500.

Va., Richmond.—C. L. Thomas will erect brick residence; cost \$4,800.

Va., Richmond.—J. L. Walther will erect brick residence; cost \$5,700.

Va., Richmond.—Addie W. Sturdevant will erect residence; brick; 2 stories; cost \$10,000.

Va., Richmond.—F. H. Boehling will erect four 2-story frame dwellings; cost \$3,000.

Va., Richmond.—Chas. L. Thomas will erect 2-story brick residence; cost \$10,000.

Va., Richmond.—Jackson Davis will erect residence; brick; 2 stories; cost \$6,555.

Va., Richmond.—W. E. Wood and Eleanor Tyneinan will erect 4 frame residences on 8 St.; cost \$4,000.

Va., Richmond.—David Kilgour plans to erect four 2-story residences on Twenty-fourth St.; cost \$4,000.

Va., Roanoke.—Ada W. Janillo will erect 2-story brick-cased residence; cost \$3,000.

### GOVERNMENT AND STATE

Fla., Jacksonville.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., receives bids until June 15 to remodel interior of postoffice; will install additional mail boxes, rearrange lobby, etc.; P. A. Dignan, Postmaster.

Miss., Jackson.—Capitol.—State, Theo. G. Bilbo, Gov., is considering plans by Theo. C. Link, St. Louis, for improvements to State Capitol; will require 340 tons steel to form skeleton for inside present building, to which outer walls will be tied; also install steam-heating system, elevators, etc.; cost \$125,000. (Previously noted.)

Okl., Anadarko.—Employees' Quarters.—Dept. of Interior, Office of Indian Affairs, Washington, D. C., receives bids until June 12 for material and erection of 2 frame employees' quarters at Kiowa Agency; plans

and specifications at office of United States Indian Warehouse, Chicago; St. Louis Builders' Exchange; St. Paul, Minn., and Supt. of Kiowa Agency, Anadarko.

Tenn., Maryville.—Postoffice.—Treasury Department, Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until June 8 to erect postoffice building.

Tex., Austin.—Capitol.—State has plans by Atlee B. Ayres, 626-27 Redell Bldg., San Antonio, Tex., for improvements to capitol, including passenger elevators, plumbing, heating and wiring installation; reinstall present passenger elevator for freight elevator; cost \$100,000; bids opened June 1. Address James E. Ferguson, Gov. Capitol Station, Austin. (Lately noted.)

Tex., Austin.—Institute.—State is having plans prepared by Kuehne, Chasey & Giesecke, Austin, for administration building and cottages at Institute for Feeble-Minded; fireproof; roofing not decided; concrete floors; independent central heating and lighting plants; bids opened in Aug. (Lately noted.)

### HOSPITALS, SANITARIUMS, ETC.

Ala., Gadsden.—Dr. J. E. Leach will erect Gadsden Infirmary; 4 stories; stone, brick and cement construction; steam heat with smokeless down-draft boilers; wood floors; vacuum-cleaning system; electric elevator; accommodate 40 to 50 patients; cost \$30,000; plans in progress.

Fla., Tallahassee.—Kinsey Sanitarium will erect main building; pressed brick; 25 rooms; remodel residence for annex of 10 rooms.

Ga., Atlanta.—Dr. R. H. Enzer, 710 Hurt Bldg., is receiving bids to erect Northside General Hospital; 3 stories; fireproof; brick and concrete; cost \$50,000; probably erect 2 wings later at cost of about \$50,000; plans and specifications at office S. D. Trowbridge, Archt., Atlanta.

Miss., Greenwood.—City voted \$10,000 bonds to assist in erecting King's Daughters' Hospital. Address The Mayor. (Lately noted.)

Mo., St. Louis.—Mt. St. Rose Hospital, Dr. Louis C. Boislaniere, Medical Director, will erect north wing to sanitarium; 4 stories; 32 rooms; sleeping porches, diet kitchens, etc.

N. C., Durham.—Lincoln Hospital Trustees will probably erect annex to hospital for colored tubercular patients; Dr. J. M. Manning, Chrmn. of Comm.

Tex., Houston.—St. Joseph's Infirmary will erect 4-story addition to building.

Tex., Vernon.—Wilbarger county votes June 24 on \$15,000 hospital bonds; E. M. Rogers, County Clerk. (Lately noted to vote May 30 on this issue.)

Va., Alexandria.—Building Comm. of Alexandria Hospital has revised plans for \$50,000 building on Duke St.; 2 stories on sides and 3 in center.

Va., Lynchburg.—McLaughlin & Johnson, Archts., 604 People's Bank Bldg., Lynchburg, receive bids until June 3 for repairs and changes to Lynchburg Hospital, as follows: New dining-room, additional rooms for nurses, improvements to kitchen, painting, etc. (Lately noted.)

W. Va., Glendale.—B. M. Spurr, Moundsville, W. Va., has plans by M. F. Glessey, Wheeling for nurses' home; 12x32 ft. with porch; 2 stories; fireproof; tile and stucco; red tile roof; wood floors, cost \$25,000; bids opened May 30. Address architect. (Lately noted under W. Va., Moundsville.)

### HOTELS

Ark., Van Buren.—Arkansas Zinc & Smelter Co. will erect hotel; construction begins in 30 days.

Fla., Pensacola.—W. B. Harbeson will expend \$20,000 to remodel and furnish Chattanooga Hotel.

Fla., St. Augustine.—Florence S. Monson, Bay Front, St. Augustine, will erect addition to Monson Hotel; 40 rooms; brick and cement; tile and tin roofs; wood floors; extension heating system; electric wiring; cost \$17,500; Fred A. Hendrick, Archt., St. Augustine. Address Chas. E. Young.

La., New Orleans.—C. E. Chapman, Archt., 622 Commercial Pl., receives bids about July 1 to erect hotel; 68x160 ft.; cost about \$50,000.

Md., Hagerstown.—Clarence Keedy & Co. will erect hotel at 121-23 W. Washington St.; 36x175 ft.; brick; tile and wood floors; steam heat; elevator. (See Machinery Wanted—Boilers; Electric Equipment; Building Materials.)

Miss., Waynesboro.—Foote Hotel has plans by W. P. Craft, Ellisville, Miss., for 10-room annex to hotel; cost \$40,000.

N. C., Winston-Salem.—A. T. Grizzard will erect store and lodging-house; cost \$7000.

Okla., Oklahoma City.—Lee-Huckins Hotel Co., Jos. Huckins, Jr., Prest., will improve hotel; will install additional elevator, 23 additional rooms with baths, etc.

S. C., Aiken.—Highland Park Hotel will improve and erect addition to building; cost \$30,000.

### MISCELLANEOUS

Fla., Valrico.—Clubhouse.—Valrico Golf Club is having plans prepared by Fort & Parslow, Tampa, for clubhouse; L. S. Sumner, Ybor City, Fla., has contract to drill 6-inch well for golf course.

Ga., Vidalia.—Barns.—Fair View Dairy, C. V. Heath, Secy., will erect 2 barns; 30x40 ft. and 14x16 ft.

Ky., Middleboro.—Amusement.—Brown Amusement Co. will erect 3-story brick building; first floor for amusements.

N. C., Greenville.—Stable.—L. W. Tucker will erect stable; cost \$5000.

S. C., Columbia.—Clubhouse.—Federated Woman's Club is having plans prepared by Urquhardt & Johnson, Columbia, for clubhouse.

S. C., Orangeburg.—Fair.—Orangeburg County Fair Comm., Edgar L. Culler, J. W. Johnson and others, will erect agricultural exhibit building.

Tenn., Lebanon.—Clubhouse.—Cedar City Commercial Club is receiving bids to erect clubhouse; lobby, 29x32 ft.; reading-room, 16x19½ ft.; gymnasium, 51x70 ft., on first floor; basement to have swimming pool, 20x42 ft.; 5 shower baths; needle bath; massage-room; Turkish bath; cooling-room; electric bath, etc.

Tenn., Nashville.—Home.—Little Sisters of the Poor will erect home in East Nashville to replace burned structure; cost \$125,000.

Tenn., Nashville.—Laboratory.—Dr. Geo. White has plans by Chas. A. Ferguson, Nashville, to erect addition to biological laboratory; brick. Address owner.

Tenn., Nashville.—Stable.—J. W. Napier has plans by Marr & Holman, Nashville, for brick stable; receives bids until June 3.

Tex., El Paso.—Clubhouse.—Woman's Club will erect clubhouse; cost \$30,000.

Tex., Rockport.—Pavilion.—Andrew Sorenson plans to erect pavilion; 92x46 ft.; 3 tiers of bathrooms, etc.; cost about \$30,000.

### RAILWAY STATIONS, SHEDS, ETC.

Ark., Clarksville.—St. Louis, Iron Mountain & Southern Ry., E. A. Hadley, Ch. Engr., St. Louis, Mo., will erect brick passenger station; bids opened May 31. (Lately noted.)

Fla., Jacksonville.—Jacksonville Terminal Co. selected J. E. Willoughby of Atlantic Coast Line Ry., Wilmington, N. C.; E. Ben Carter, Florida East Coast Ry., St. Augustine, Fla.; W. D. Faucette, Seaboard Air Line Ry., Norfolk, Va.; T. H. Catlin, Southern Ry. Co., Washington, D. C., and J. A. Griffin, Georgia Southern & Florida Ry., Macon, Ga., to have detailed plans and specifications prepared for union station, secure bids for erection and supervise construction of building. (Lately noted.)

Mo., DeSoto.—St. Louis, Iron Mountain & Southern Ry., E. A. Hadley, Ch. Engr., St. Louis, is reported to erect \$17,000 depot; construction begins in 30 days.

N. C., Charlotte.—Southern Ry. Co., W. H. Wells, Chief Engr. Const., Washington, D. C., will improve passenger station; enlarge white and colored waiting-rooms; lengthen umbrella shed over tracks; lay cement walk between tracks under shed, etc., cost \$35,000. (Previously noted.)

Okla., Tulsa.—Midland Valley R. R. Co., C. Kalzhan, Ch. Engr., Muskogee, Okla., will erect reinforced concrete passenger station.

Tenn., Nashville.—Nashville-Gallatin Interurban Ry., F. W. Hoover, Prest., plans to erect interurban station.

Tex., Amarillo.—Chicago, Rock Island & Pacific Ry., C. A. Morse, Chf. Engr., Chicago, will rebuild depot recently noted damaged by fire.

Va., Petersburg.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, Va., will erect addition to freight warehouse; 2 stories; about 150 ft. long.

Va., Shenandoah.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, Va., will erect passenger depot; cost \$15,000.

W. Va., Weston.—Monongahela Valley Traction Co., O. L. Harrison, local agent, has plans by Holmboe & Lafferty, Clarksburg, W. Va., for interurban station; 3 stories; 40x50 ft.; rear portion 50x25 ft.; waiting-room on first floor; offices above; brick construction.

### SCHOOLS

Ala., Montgomery.—Woman's College has plans by Okel & Cooper, Vandiver Bldg., Montgomery, for dormitory; 4 stories; 51 bedrooms, reception-room, gymnasium with gallery, steel lockers; shower baths; slate and graphite private baths for teachers; brick, stone and marble construction; cost \$50,000; bids opened May 29. (Lately noted.)

Fla., Bonifay.—City is reported to erect school building; cost about \$16,000; contract let June 1. Address School Trustees.

Fla., Delray.—Delray School Dist. No. 6 votes June 17 on \$30,000 bonds for school building. Address Secy. Board of Public Instruction of Palm Beach County, West Palm Beach, Fla.

Fla., Jacksonville.—Duval County Board of Public Instruction, F. A. Hathaway, County Supt., 415 Masonic Temple, receives bids until June 24 to erect 4-room brick school at Fishview Park, near Jacksonville; plans and specifications at office of Rutledge Holmes, Archt., Jacksonville, and Mr. Hathaway, as above.

Fla., New Smyrna.—County Board of Public Instruction has revised plans for school; 166x86 ft.; 2 stories; 16 classrooms, study-rooms, office and auditorium to seat 600; brick, hollow tile or concrete exterior walls; cost \$37,000; bids opened June 3; completion by Jan. 1; A. E. Lewis, Archt., Real Estate Bldg., Miami, Fla. (Lately noted.)

Ga., Atlanta.—Atlanta Medical College will soon invite bids to erect clinic building; Hentz & Reid, Archts., Candler Bldg., Atlanta.

Ga., Augusta.—School Board accepted plans by G. Lloyd Preacher, Augusta, for Houghton School; Spanish mission style; 2 stories; fireproof; 17 classrooms, kindergarten shop, cooking-room, etc.; auditorium to seat 500; open-air pavilion on roof; cost \$30,000, exclusive of equipment; contract probably let July 1; completion Jan. 1. (Lately noted.)

Ga., Leslie.—City defeated \$10,000 bonds to erect school. (Lately noted.)

Ga., Macon.—C. H. Bruce, Supt., receives bids until June 12 to erect school; plans and specifications at office Curran R. Ellis, Archt., Macon.

Ga., Savannah.—African Mission Society has plans by Henry Urban, Savannah, for 3-story brick school for negroes.

Ga., Stockbridge.—City votes June 12 on \$20,000 bonds for school building; J. H. Owen, Town Clk.

Ga., Tallapoosa.—Board of Education has plans by Morris & Morris, Atlanta, for school building; will soon let contract.

Ky., Berea.—Berea College, Wm. Goodell Frost, Prest., will erect dormitory; cost \$40,000.

Ky., Covington.—Board of Education, A. A. Renshaw, Prest., is having plans prepared by Weber, Werner & Adkins, 414 Walnut St., Cincinnati, for 3-story high school; cost \$165,000. (Previously noted.)

Ky., Hickman.—City voted \$10,000 bonds to erect high school. Address The Mayor.

Ky., Louisville.—Baptist Women's Missionary Association is having plans prepared by Brinton B. Davis, Louisville, for training school for women missionaries; 210x140 ft.; accommodations for 125 students; memorial hall in connection; cost \$150,000; Mrs. Saml. W. Woody, Chrmn.; Miss E. S. Broadus, Mrs. A. B. Weaver and others, committee.

Ky., Versailles.—Margaret College Directors will erect school and gymnasium; 45x48 ft. and 64x44 ft.; stone and brick; slate roof; hard maple floors; steam heat; electric lights and natural gas lighting; cost \$25,000; Arthur Glanville, Archt., Lexington, Ky.; contract let about June 1; construction begins June 10. Address Louis Marshall, Versailles. (Previously noted.)

La., Gears Mill.—Building Comm. has plans by J. J. Mixon, Winnfield, La., for school and auditorium; bids opened May 29.

La., Vinton.—Vinton School Dist. voted \$30,000 bonds to erect brick school. Address Dist. School Trustees.

Md., Baltimore.—City will erect addition to No. 47 school at Eastern and Linwood Aves.; cost \$30,000; John Hubert, Acting Prest. Board of Awarads.

Md., Cumberland.—Allegheny County Commissioners will issue \$75,000 bonds for school improvements.

Miss., Brookville.—Town has plans by P. J. Krouse, Meridian, Miss., for school; 2½ stories; about 55x70 ft.; brick; composition roof; wood floors; electric wiring for city lights; cost \$3500; hot-air heat, \$500 to \$600. Address D. T. St. John, Brookville. (Lately noted.)

Miss., Clarksburg.—City is reported to have voted \$4500 school bonds. Address The Mayor.

Miss., Cleveland.—L. M. Guynes, Town Clerk, receives bids until June 6 for construction, plumbing and heating annex to school; 2 stories; brick; about 30x70 ft.; cost \$9000; plans and specifications at office Mr. Guynes.

Miss., Enid.—Tallahatchie County Comm. will erect consolidated high school; cost \$9000; R. H. Harrison, Supt., Charleston, Miss.

Miss., Jackson.—State Blind Institute has plans by N. W. Overstreet, Jackson, for art and science building; 60x90 ft.; semi-fireproof; tile and composition roof; wood and reinforced concrete floors; cost \$14,000; steam heat, about \$2000; bids opened June 10; construction begins July 1; plans and specifications at office of architect.

Mo., Columbia.—City lets contract in July to erect graded school; cost \$35,000; also addition to school to cost \$20,000; W. B. Itner, Archt., St. Louis. Address Secretary Board of Education. (Lately noted.)

Mo., Lebanon.—Lebanon School Dist. voted bonds for school improvements. Address Dist. School Trustees.

N. C., Bailey.—Bailey School Dist. votes June 6 on \$20,000 bonds to erect brick school. Address Dist. School Trustees. (Previously noted.)

N. C., Durham.—Nelson School Dist. voted special tax to erect school. Address Dist. School Trustees. (Previously noted.)

N. C., Huntersville.—Huntersville School Dist. accepted plans by Hunter & Gordon, Charlotte, N. C., for school; brick; slate roof; steam heat; auditorium to seat 750; cost \$29,000. (Previously noted.)

Okla., Altus.—School Board, H. I. Miner, Clk., will erect school.

Okla., Dewey.—City voted \$40,000 bonds to erect high school. Address The Mayor.

Okla., Sapulpa.—City will probably vote on bonds to erect high school; W. D. Richardson, Prest. School Board.

S. C., Reevesville.—Reevesville School Dist. will erect school building; 60x60 ft.; brick; wood floors; other details not determined; cost \$4000 to \$4500. Address J. H. Bryant. (Lately noted.)

N. C., Charlotte.—Davidson College, Dr. W. J. Martin, Prest., will erect gymnasium; cost \$25,000.

S. C., Florence.—W. J. Wilkins & Co., Archts., Florence, receive bids until June 10 to erect high school and colored school; plans and specifications at office of architects as above; W. R. Barringer, Chrmn. (Lately noted.)

S. C., Fort Lawn.—School Board, M. W. Roddey, Secy., receives bids until June 5 to erect school building; 2 stories; 3 rooms and auditorium.

S. C., Leo.—Trustees will erect school; about 36x60 ft.; lumber; shingle roof; pine floors; ordinary heaters; lighting not decided; cost about \$3000. Address J. D. Carter; contract let about Aug. 1.

Tenn., Madisonville.—Board of Education will erect school; 12 to 14 rooms; brick; wood floors; cost \$20,000; W. H. McCrosky, Mayor. (Lately noted.)

Tenn., Memphis.—County Board of Education has plans by Hanker & Cairns, Memphis, for 2-story reinforced concrete school; cost \$50,000.

Tenn., Sweetwater.—Sweetwater College has plans by U. S. Beard, Sweetwater, for barracks; 22x14 ft. with wing 22x30 ft.; brick; felt and gravel roof; wood floors; cost \$15,000; steam heat, \$700; electric lights, \$200; bids opened about June 10. Address C. B. Guthrie. (Previously noted.)

Tex., Austin.—Students' Co-operative Society of Texas University plans to erect \$12,000 brick building opposite campus; 80x43 ft.; 1-story; completion Oct. 1.

Tex., Austin.—State has plans by Atlee B. Ayres, 626-27 Redell Bldg., San Antonio, for buildings at Blind Institute as follows: Administration building 3 stories; 5 two-story typical cottages; 2-story and part basement power house and laundry; 2-story superintendent's residence; reinforced concrete frame and floors; hollow tile walls veneered with face brick; tar and gravel roof on concrete slabs; reinforced concrete floors slabs with pine flooring; 3 small vault lights for powerhouse basement; cost \$225,000; central heating plant in powerhouse to heat all buildings, cost approximately \$25,000; lights from city plant; estimated cost electrical installation \$20,000; hand power elevator in administration building, \$350; bids opened June 1. Address James E. Ferguson, Gov. Capitol Station, Austin. (Lately noted.)



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Tex., Barstow.—Ward county, Common School Dist. No. 1, is reported to have voted \$15,000 bonds to erect and equip school. Address Dist. School Trustees.

Tex., Beaumont.—School Board, H. B. Funchess, Chmn. Bldg. Com., is considering bond issue to rebuild Pollard School noted damaged by fire at loss \$7000.

Tex., Coleman.—Voss Precinct voted \$4000 bonds to erect stone school. Address School Supt.

Tex., Brownwood.—Cannon School Dist., voted \$3000 bonds to erect school building; stone or brick. Address District School Trustees.

Tex., Dallas.—Trustees St. Mary's College will erect Garrett Hall addition to college for science building; F. W. Offenhauser, Trustee.

Tex., Dallas.—St. Mary's College, Rev. Alexander C. Garrett, Pres., will erect Garrett Hall for laboratories; natural and domestic science; 9 classrooms.

Tex., Guadalupe.—Common School Dist. No. 7, Victoria County, has plans by Jules Leffland & Son, Victoria, Tex., for school; 4 rooms, 2 stories; brick; gravel roof; wood floors; ventilating heaters in each room; bids opened about June 15; Address Archts. (Previously noted.)

Tex., Houston.—Harris County School District No. 20, J. W. Lyle, Supt., receives separate bids until June 6 to erect 2-story brick school at Port Houston and brick addition to Magnolia Park school; plans and specifications at office F. S. Glover & Son, Archts., 612 Binz Bldg., Houston.

Tex., Malone.—City votes June 10 on \$9000 bonds to erect high school. Address The Mayor.

Tex., Paris.—City is having plans prepared by Barry & Smith, Paris, and Sanguinet & Staats, Fort Worth, for high school to replace burned structure; votes June 29 on \$60,000 bonds to supplement \$10,000 bonds now available and insurance from burned structure, making total of \$150,000. (Lately noted.)

Tex., Tokio.—Trustees have plans by Edw. H. Reed, 1903 Amicable Bldg., Waco, Tex., for school; bids opened May 31.

Tex., Vernon.—City is considering election on bonds to erect school, etc. Address The Mayor.

Tex., Wichita Falls.—City voted \$65,000 bonds to erect schools. Address The Mayor. (Lately noted.)

Tex., Yorktown.—Yorktown High School Trustees ordered election June 27 on \$10,000 bonds to erect addition to building.

Va., Alexandria.—Mount Vernon Seminary, Incptd.; \$25,000 capital; Adella Gates Henly, Pres., and Katherine E. Hill, Secy., 1100 M St. N. W.; both of Washington, D. C.

Va., Hampton.—School Board Chesapeake Dist. J. M. Willis, Div. Supt., 406 Armistead St., receives bids until June 3 to erect Fox Hill School; plans and specifications at office Mr. Willis.

Va., Lexington.—Rice Hotinger, Chmn. Bldg. Com., receives bids until June 3 to erect Sunday-school at New Monmouth Church on Kerrs creek; plans and specifications at Rockbridge Natl. Bank.

Va., Leesburg.—Leesburg School Dist. voted \$30,000 bonds to erect school; hollow tile exterior walls; finished with stucco; brick foundation; wood and plaster interior walls; 10 classrooms, laboratory and auditorium to seat 600; John B. Crawford, Archt., Leesburg. (Lately noted.)

Va., Stanley.—Stanley School Dist. voted \$10,000 bonds. Address Dist. School Trustees.

W. Va., Barbourville.—Board of Education, D. Blain Shaw, Secy., receives bids until June 29 for repairs and erection of 4-room addition to school building; plans and specifications on file after June 5 at office of Mr. Shaw. (Lately noted.)

W. Va., Charleston.—Charleston Independent School Dist. votes June 12 on \$125,000 bonds for schools. Address School Board.

W. Va., Charleston.—Charleston Ind. School Dist., Val Rauth, Pres., W. O. Daum, Secy., votes June 12 on \$125,000 bonds to erect and equip school building in Second Ward, purchase sites on Bigley Ave. in Third Ward and on Washington St. in Ninth Ward for schools, erect and equip school in Tenth Ward, repair and alter Union building in Fifth Ward and Garnett building in Eighth Ward.

W. Va., Warwood.—Richland Dist. Board of Education will have plans revised by Franzheim & Pogue, Wheeling, W. Va., for school. (Lately noted.)

# STORES

Ark., Little Rock.—W. H. Lamberson will erect 1-story brick building; cost \$3000.

Ark., Provo.—Kemp Bros. contemplate erecting store building at Pulitite.

Ark., Stuttgart.—A. A. Hartsell is having plans prepared for 2-story brick business building.

Fla., Auburndale.—S. Y. Allen is having plans prepared by Bryan & Poter, Room 8, Elliston Bldg., Lakeland, Fla., for store building; 28x56 ft.; ordinary construction; Barrett roofing; cost \$6000; construction by owner.

Fla., Fort Lauderdale.—W. H. Pick will erect concrete store building at Bricknell Ave. and Third St.; 40x125 ft.; will lease to Hopkins & Hart.

Fla., Dunedin.—Joe Gorra will erect business block; red pressed-brick construction; plate-glass fronts.

Fla., Jacksonville.—Frank Richardson will expend \$4000 to remodel 7-story concrete building.

Fla., Miami.—Geo. E. Merrick and T. O. Wilson will erect store and apartment building. (See Apartment Houses.)

Fla., Miami.—David Afremow will erect store and apartment building at 10th & E Sts.; 2 or 3 stories; 5 stores.

Fla., Miami.—W. H. Nichols will erect store at 10th and E Sts.; 1 story; 9 stores; foundation to support additional stories.

Fla., Miami.—Realty Securities Corp. will make slight repairs to building at present and not erect larger building for year. (Lately noted to erect business building.)

Ga., Atlanta.—W. A. Brightwell will erect store building; cost \$3500.

Ga., Atlanta.—Dr. W. B. Candler will expend \$3200 to erect addition to building at Bellwood and Ashby Sts.; day labor.

Ga., Eatonton.—T. G. Green is receiving bids to erect store building; 1 story; common and face brick; cement floor; metal roof; skylights; cost \$3000; P. E. Dennis, Archt., American National Bank Bldg., Macon, Ga.

Ga., Fort Valley.—Dr. Geo. H. Slappey is having plans prepared by Philander P. Scroggs, Augusta, Ga., for remodeling store and theater; matt glazed terra-cotta front; marble stairs; steam heat; electric lights; cost \$8000.

La., Jennings.—Krielow Grain & Mercantile Co. will erect storeroom and warehouse. (See Warehouses.)

La., New Orleans.—United Fruit Co. will alter building; cost \$3900.

Miss., Greenville.—Morris Goldstein plans to erect building for tailoring establishment; brick.

Miss., Vicksburg.—Bock-Fishel Dry Goods Co., L. A. Sulth, Secy. and Treas., acquired Fried Bldg. on Chona St.; will remodel for dry goods store.

Miss., Waynesboro.—G. T. Heard, Brookville, Miss., has plans by W. P. Craft, Ellisville, Miss., for 2 brick stores; cost \$2650.

Mo., Joplin.—Henry Phelps, Chmn. I. O. O. F. Building Comm., will erect lodge and business building. (See Assn. & Frat.)

N. C., Asheville.—S. Sternberg will erect four 1-room stores, 123-25-27-29 Roberts St.; cost \$10,000.

N. C., Greenville.—W. H. Long will erect stores; cost \$6500.

N. C., Hamlet.—Patrick Furniture Co. is having plans prepared by C. Gadsdon Sayre, Anderson, S. C., for store building; 62x90 ft.; 2 stories; rough texture brick; matt glazed cream white terra cotta; plate and transom glass; copper construction front; mahogany base; cast iron columns; steel girders; metal ceiling; hardwood floors; electric lights; cost not determined; no heating.

N. C., King.—Junior Order United American Mechanics will erect store and lodge building; 2 stories.

N. C., Winston-Salem.—A. T. Grizzard will erect store and lodging-house; cost \$7000.

Okla., Altus.—A. Key, Oklahoma City, will erect 2 buildings; each 25 ft. front.

Okla., Oklahoma City.—L. M. Rauch will erect store and apartment building; cost \$10,000.

S. C., Anderson.—Fred B. Maxwell, guardian, has plans by Casey & Fant, Anderson, for 2-story store and office building for Mrs. J. D. Maxwell; 4 storerooms and lobby on first floor; 14 offices above; cost \$15,000 to \$20,000.

Tenn., Knoxville.—Sterchl Bros. leased Hall & Stephenson Bldg., T. A. Wright, owner; will erect 2 additional stories;

Sterchl Bros. also acquired Brakebill Livery Stable; will erect additional stories to make same 8 stories at cost of \$40,000; connect 2 structures by bridge over alley; also acquired S. S. McCampbell Stable on Central St. and will expend \$7500 to \$9000 to convert same into warehouse, installing sprinkler system, concrete floors, etc.

Tenn., Nashville.—J. O. Lenke and others receive bids about June 2 to erect store and office building. (See Bank and Office.)

Tex., Austin.—Kuehne, Chasey & Giessecke, Austin, prepared plans for business building on Guadalupe St.; 46x50 ft.; brick and frame; gravel roof; 3-way or louver vault lights; 1000-lb. freight elevator; cost \$12,000; heating, \$500; bids opened about June 16.

Tex., Beaumont.—W. C. Tyrrell and J. Cooke Wilson are having plans prepared by F. W. Steinman & Son, Beaumont, for business building; cost \$30,000.

Tex., Brownwood.—R. B. Rogers will erect brick business building.

Tex., Colorado.—C. H. Earnest will erect business building. (See Bank and Office.)

Tex., Dallas.—Leon Blum and Louis Reinhardt will erect 3-story brick business building to be occupied by Goodyear Tire & Rubber Corporation of Texas, A. G. Cameron, local manager; 40x150 ft.; completion by Oct. 1.

Tex., Lockney.—J. H. Gruver, Farmers' Exchange, Riley & Wofford, D. J. Thomas, T. B. Hill and J. R. Meriwether are having plans prepared by Sanders & Myers, Lockney, and J. L. Scott, Sweetwater, Tex., for buildings to replace structures lately noted damaged by fire; two 30x100 ft., two 30x90 ft. and two 30x90 ft.; brick; tar and gravel roofs; lumber and concrete floors; town electric lights; cement walks; cost \$5000 each. (See Machinery Wanted—Building Materials—Metal Ceiling; Plate Glass; Roofing.)

Tex., Port Arthur.—R. H. Woodworth, Prest. First Natl. Bank, will erect business building.

Tex., San Antonio.—Whitaker & Washington, structural engineers, 207 Moore Bldg., San Antonio, receive bids until May 27 to erect factory and store building for Lafayette Ward; 1-story; fireproof; reinforced concrete.

Tex., Shamrock.—D. F. Spruill has plans by C. Risser & Co., Amarillo, Tex., for business building; 1-story; brick; 35x100 ft.

Tex., Shamrock.—B. F. Holmes has plans by C. Risser & Co., Amarillo, Tex., for business building; 1-story; brick; 25x120 ft.

Tex., Colorado.—C. H. Laskey will erect business building. (See Bank and Office.)

Tex., Uvalde.—A. F. & A. M. will erect business and lodge building.

Tex., Waco.—H. M. Balne will erect business building; 2 stories; 50x120 ft.

Va., Covington.—C. A. Fudge, Prop. C. A. Fudge Hardware Co., will erect brick business building.

Va., Richmond.—D. Coken will erect brick store; 2 stories; cost \$8000.

Va., Richmond.—Corley Co. will erect 3-story brick store at 206 E. Grace St.; cost \$25,000.

# THEATERS

Fla., West Palm Beach.—Bijou Theater Co. will erect 1-story addition to building.

Ga., Port Valley.—Dr. Geo. H. Slappey is having plans prepared for remodeling store and theater. (See Stores.)

Md., Baltimore.—A. Lowther Forrest, 900 Law Bldg., is preparing plans to convert Casino on North Ave. into moving-picture theater; cost about \$100,000.

Tenn., Nashville.—Crescent Amusement Co. has plans by Marr & Holman, Nashville, for moving-picture theater on 1th Ave.; interior finish of white, walls in French gray; exterior, French renaissance; dark red brick and terra-cotta; ornamental-iron marquise extending over entire front; 4 marble stairways; 15 private boxes; pipe organ with 2 sets of echo organs; indirect lighting system; fireproof; seating capacity 1500; cost \$100,000; date opening bids not set; contract let as whole. (Lately noted.)

# WAREHOUSES

Ala., Roanoke.—Roanoke Banking Co. will erect 7 brick warehouses on West Point St.; 50x200 ft.; brick; tar and gravel roof; concrete floors; cost \$50,000 to \$75,000; construction begun. (Lately noted.)

Ky., Lexington.—Van Deren Hardware Co. will erect warehouse.

La., Jennings.—Krielow Grain & Mercantile Co. will erect storeroom and warehouse at N. Market and Broadway; brick; 220x120 ft.; cost \$14,000.

N. C., Durham.—W. P. Henry Tobacco Co. will erect 1-story brick warehouse.

N. C., Winston-Salem.—W. H. Turner has plans to erect warehouse.

Tenn., Knoxville.—Davis & Susong will erect office and freight warehouse.

Tenn., Knoxville.—Sterchl Bros. will remodel building for warehouse, etc. (See Stores.)

# BUILDING CONTRACTS AWARDED

## APARTMENT-HOUSES

Fla., Daytona Beach.—Karl Edner let contract for store and apartment building. (See Stores.)

Md., Baltimore.—Owosso Apartment Co. let contract to John F. Kunkel, 29 S. Linwood Ave., Baltimore, to erect apartment-house on Lake Drive; 6 suites; 3 stories; 35.6x36 ft.; brick and frame; 1st floor fireproof; slag roof; mostly wood floors; steam heat; electric lights; cost \$25,000; Clyde N. Friz, Archt., Munsey Bldg., Baltimore. (Previously noted.)

Mo., Joplin.—L. W. Winter let contract to W. L. Lauderbach, Joplin, to erect apartment house; 20 rooms; 35x51 ft.; brick veneer; shingle roof; pine floors; hot water heat; electric lights; cost \$7000; sidewalks \$100. (Lately noted.)

Okla., Oklahoma City.—Mrs. Nora M. Hadly let contract conditionally to J. W. Lucas, Oklahoma City, to erect 2-story and basement apartment; Hawk & Parr, Archts. 501 Security Bldg., Oklahoma City. (Lately noted.)

Va., Newport News.—Drs. J. W. C. Jones and J. M. Coleman let contract to erect apartment and office building. (See Bank and Office.)

## ASSOCIATION AND FRATERNAL

Ala., University.—Beta Chapter, Kappa Sigma Fraternity let contract to H. C. Burns, Birmingham, to erect clubhouse; 3 stories; 84x36 ft.; brick and tile; steel frame; tile roof; oak floors except tile porch; cost \$10,000; heating plant \$1600; electric fixtures \$1000; D. O. Whildin, Archt., Birmingham. Address owner.

Md., Cumberland.—Cumberland Aerie No. 245, F. O. E., let contract to Wright Richardson & Co., Inc., Cumberland, to erect lodge building; 100x35 ft.; 3 stories; brick,

steel and concrete; slag roof; wood floors; electric lights; concrete sidewalks; cost \$35,000; steam heat, \$2000; elevator, \$1800; Wright Butler, Archt., Cumberland. (Lately noted.)

N. C., Winston-Salem.—Y. M. C. A., Mrs. J. R. Reynolds, Pres., let contract to Harbin Construction Co., Lexington, N. C., to erect Y. W. C. A. building; brick and stucco; 95x105 ft.; Spanish tile roof; pine floors; electric lights from local plant; cost \$25,775; nearly all materials purchased; also let following sub-contracts: Marble and tile work, McClamrock Co.; steel work, J. D. Wilkins; both of Greensboro, N. C.; brick, Hedgerock Brick Co.; grading and tanning, Shore Transfer Co.; both of Winston-Salem; cement, Carolina Portland Cement Co., Charleston, S. C.; shopwork, lumber, roofing, and electric wiring not let. Joel R. Hill, Archt., Winston-Salem. Address General contractor. (Lately noted.)

Tenn., Sewanee.—Kappa Alpha Fraternity let contract to C. W. Brown, 411 S. 57th St., Birmingham, Ala., to erect fraternity house; stone; tile roof; E. B. LaRoche, Archt., 1707-11 Empire Bldg., Birmingham.

## BANK AND OFFICE

Fla., Miami.—Fidelity Bank & Trust Co. let contract to remodel bank and office building; concrete and brick; flat tile roof; wood and tile floors; 14 offices on second floor; cost \$50,000. (Lately noted.)

Ky., Lexington.—Drs. David and Woolfolk Barrow and W. O. Bullock let contract to Congleton Lumber Co., Lexington, to erect office building for physicians; 2 stories and basement; brick; cost \$17,000; Ballenger & Perrot, Archts., Philadelphia, Pa. (Noted in Mech.)

S. C., Anderson.—J. H. Anderson and M. M. Mattison let contract to Chas. B. Pruitt, Anderson, to erect office building; 50x93 ft.;

ordinary construction; tin roof; steam heat; electric lights; cost \$17,000; Casey & Fant, Architects, Anderson. Address contractor. (Previously noted.)

Tenn., Carthage.—Smith County Bank let following contracts for erection of bank and office building: Brick work, Bush Building Co.; roofing, Uncle Hiram Roofing Co.; plastering and ornamental work, Daniel Pepper; stone work, Foster-Creighton Co.; all of Nashville, Tenn.; bank fixtures, Southern Seating & Cabinet Co., Jackson, Tenn.; plans by C. K. Colley, 33-40 Life & Casualty Bldg., Nashville, call for 2-story brick and concrete building; composition roof; reinforced concrete floors overlaid with tile; low-pressure steam heat; cost \$65,000; all other work day labor. (Previously noted.)

Tenn., Morristown.—First National Bank Comm. let contract at \$54,950 to W. H. Bostwick, Jefferson City, Tenn., to erect building; 6 stories; fireproof; steel; reinforced concrete frame; light face brick; Tennessee marble trim; main building 47½x70 ft.; 1-story brick store building in rear, 20x47½ ft.; bank on lower floor and mezzanine; upper floors for offices; elevator to cost \$300; separate bids for fixtures to cost about \$15,000; J. K. Peebles, Archt., Norfolk, Va.

Tex., Post.—First National Bank let contract to J. M. Morgan, Big Springs, Tex., to erect bank building; 1 story and basement; 40x80 ft.; asphalt, felt and gravel roof; cost \$14,500; hot-air heat \$250; R. E. Gilmore, Archt., Post; other contracts include plumbing and heating, Jos. Samson; electric work, Greenfield & Jones; owner will purchase vault doors; fixtures purchased. (Lately noted.)

Va., Newport News.—Drs. J. W. C. Jones and J. M. Coleman let contract to J. W. Davis, Box 564, Newport News, to erect office and apartment building on 26th St.; brick; gravel roof; wood floors; hot-water heat; cost \$10,000; McKee & Williams, Architects, Newport News. (Lately noted.)

Va., Rose Hill.—Farmers & Merchants' Bank, Boonpath, Va., let contract to R. L. Brown, Middleboro, Ky., to erect bank building; 31x52 ft.; brick; old style tin roof; oak and pine floors; cost \$4500. (Lately noted under Va., Boonpath.)

### CHURCHES

Ala., Jasper.—Jasper Methodist Church let contract to A. T. Smith, Jasper, to erect \$35,000 building; Joy & Gallup, Architects, 1918 Jefferson County Bldg., Birmingham.

Ga., Atlanta.—Reed Street Baptist Church let contract to John D. Shields, Atlanta, to remodel building; cost \$3000.

Ky., Prestonsburg.—Methodist Episcopal Church South has plans by and let contract to John W. Columbus, Paintsville, Ky., to erect building; pressed brick and stone; tile roof; oak floors; cost \$18,000; construction begins about June 1. (Lately noted.)

Ky., Russellville.—T. H. May & Co., Evansville, Ind., have contract to erect church and Sunday-school building; main auditorium to seat 400; 15 Sunday-school rooms and Sunday-school auditorium to seat 150; brick and stucco; slate roof; oak bowl floors; low-pressure steam heat; electric lights; cost \$30,000; C. K. Colley, Archt., 33-40 Life & Casualty Bldg., Nashville, Tenn.

Md., Manchester.—Manchester Lutheran Church let contract to Geo. Reed to erect parsonage and barn.

W. Va., Charleston.—First Church of Christ, Scientist, let contract to Abbott Bros., Charleston, to erect building; stucco construction; hardwood interior; seating capacity 400; cost \$8000; completion by Aug. 1.

### CITY AND COUNTY

Tenn., Union City—Jail.—City let contract at \$10,000 to Will Spradlin, Fulton, Tenn., to erect jail. (Lately noted.)

### COURTHOUSES

Tex., Tahoka.—Lynn County let contract at \$60,000 to A. Z. Rodgers, Tahoka, to erect courthouse; 4 stories; fireproof; construction begins at once. (Lately noted.)

### DWELLINGS

Ala., Gadsden.—Carl Rohlin let contract to Jack Loyd, Gadsden, to erect bungalow; cost \$3000.

Ala., Montgomery.—Jos. J. Toole let contract to Huggar Bros., Montgomery, to erect residence; cost \$10,000; C. F. Gallier, Archt., Montgomery.

Ala., Piedmont.—Lon Adderholt let contract to Morgan Bros., Piedmont, to erect 2 dwellings; 4 and 5 rooms; brick; concrete floors; erect additional dwelling later.

Ga., Atlanta.—Stewart Maiden let contract to erect residence; cost \$3500.

Ga., Augusta.—W. H. Jones let contract to Woodward & Mobley, Augusta, to erect residence; cost \$3900.

Ga., Augusta.—W. W. Hunter let contract to McKenzie & Thompson, Augusta, to erect bungalow; cost \$3000.

Ga., Augusta.—Mrs. J. H. Easterling let contract to Atlantic Construction Co., Augusta, to erect residence; cost \$5000.

Ga., Augusta.—Mrs. K. J. McCarrell let contract to Palmer-Spivey Construction Co., Augusta, to erect 2-story residence at 219 Green St. to cost \$4250, another at 131 Green St. to cost \$1800, and another at 9 Green St. to cost \$1200.

Ga., Augusta.—N. M. Hunter let contract to McKenzie & Thompson, Augusta, to erect \$3000 residence.

Ga., Augusta.—John Moore let contract to McKenzie & Thompson, Augusta, to erect dwelling; 2 stories; 37x40 ft.; brick; tin shingle roof; pine floors; cost \$4000; hot-air furnace, \$248; Joe T. Lawrence, Archt., Augusta. (Lately noted.)

Ga., Newnan.—Frank L. Stevens let contract to Ernest McCullough, Newnan, to erect residence; 2 stories; 19 rooms.

Ky., Lexington.—David M. Look let contract to R. B. Hayes, Lexington, to rebuild Castleton residence; 59x146 ft.; 2 stories and basement; No. 1 black Bangor roofing; wood joist flooring with parquet finish; 4x5-ft. hand-power lift; cost \$40,000; let contract for hot-water heating and electric lighting, respectively, to J. J. Fitzgerald and Beard & Lyons, both of Lexington; Theo. E. Blake of Carriere & Hastings, Archt., 45th St. and Vanderbilt Ave., New York.

Md., Baltimore.—Theodore Cook, 914 N. Charles St., has plans by J. Spear and let contract to Geo. C. Goldman, 5309 St. George Ave., Baltimore, to erect seven 2-story residences on 13th St.; four 22x37 ft., two 16x55 ft., one 15x55 ft.

Md., Baltimore.—Francis E. Yewell, 337 Title Bldg., let contract to Mathis Building Co. to erect 2 duplex cottages Springdale and Grantley Aves.; cost about \$12,000.

Md., Baltimore.—Wm. G. Buckey, 3302 Carlisle Ave., has plans by M. H. Murray, 3017 Chelsea Ave., Baltimore, and let contract to Murray & Haynes, 3017 Chelsea Ave., Baltimore, to erect residence; 2½ stories; frame construction; 27x32 ft. (Previously noted.)

Miss., Clarksdale.—W. B. Nichols let contract to D. D. Thomas & Sons, Memphis, Tenn., to erect residence.

Mo., Kansas City.—Dr. D. I. Blanford, 2855 Southwest Blvd., has plans by J. G. Braecklein, Massachusetts Bldg., Kansas City, for previously noted residence; 27x32 ft.; stucco; oak floors; hot water heat; electric lights; cement sidewalks; cost \$5000; day labor. Address owner. (See Machinery Wanted—Heating Plant.)

Mo., St. Louis.—Clem Degenhardt let contract at \$16,000 to South Side Bldg. Co., St. Louis, to erect eight 1-story residences, 6518-90 Arsenal St. and 6546-67 Sunley Ave.

N. C., Greensboro.—W. L. Carter let contract to W. C. Bain, Greensboro, to erect dwelling; cost \$13,000; plumbing and heating to be let separately at about \$1500; James Hughes, Archt., Greensboro.

N. C., Winston-Salem.—T. W. Watson let contract to J. H. Grubbs, Winston-Salem, to repair 2 frame residences near Ridge St.; also to erect 3 frame residences near Ridge St.; one 6 rooms, two 4 rooms.

Okla., Ardmore.—B. A. Simpson let contract to Russell Brown & Co., Fort Worth, and Daniel Walling, Houston, Tex., to prepare plans and superintend construction of residence; cost \$40,000.

S. C., Clinton.—J. D. Bell let contract to Chas. L. Rounds, Clinton, to erect residence; brick veneer; slate roof; 9 fireplaces; electric lights; cost \$7000; Casey & Fant, Architects, Anderson, S. C.

S. C., Spartanburg.—B. S. Luther let contract to Geo. W. Wall, Spartanburg, to erect 2 bungalows; cost \$5000.

Tenn., Knoxville.—Clarence Beaman has plans by Albert Gredig, Knoxville, for 2 bungalows in Park City; 6 rooms; full basements; frame; asphalt shingle roof; oak and maple floors; steam or hot-water heat; electric lights; concrete sidewalks; cost \$4000; construction by owner; let contract for carpenter work to Rutherford & Carey, Knoxville. Address owner.

Tenn., Memphis.—Colonial Trust Co., let contract to J. B. Moody, Memphis, to erect 5, 6, and 7-room bungalows at 1855-59 Young Ave. and 1874-78 Manila Ave.; brick and stucco and stone and stucco; vulcanite and

asphalt shingle roof; oak floors; hot-air and hot water heat; cost \$2200 to \$3000; S. J. Weigel, Archt., Memphis. (Lately noted.)

Tenn., Memphis.—Bishop W. B. Murrah let contract to D. M. Crawford Co., Inc., Bldrs.' Exchg., Memphis, to erect residence; brick veneer; tile roof; hardwood floors; electric lights; cost \$12,000; hot-water heat, \$80; Hubert T. McGee, Archt., Tennessee Trust Bldg., Memphis. (Lately noted.)

Tenn., Memphis.—W. P. Armstrong let contract to J. C. Jones & Co., Memphis, to erect residence; brick and stucco; shingle roof; Mahan & Broadwell, Architects, Memphis. (Lately noted.)

Tenn., Nashville.—Albert S. Britt let contract to W. F. Holt, Nashville, to erect 2-story frame residence; Thos. W. Gardner and Edward E. Dougherty, Architects, Nashville. (Lately noted.)

Tenn., Nashville.—A. D. Welburn let contract to W. A. Hosale, 324 Rose St., Woodbine Station, Tenn., to erect residence; 7 rooms; stucco; asphalt shingle roof; hardwood floors; cost \$6300; vapor heat \$700; city electric lights; D. W. Southgate, Archt., Arcade, Nashville. (Lately noted.)

Tenn., Nashville.—C. A. Goding let contract to W. F. Holt, Nashville, to erect 2-story residence; plans by Edward E. Dougherty and Thos. W. Gardner, Nashville. (Lately noted.)

Tex., Bonham.—R. T. Saunders let contract to erect 2-story residence.

Tex., Ralls.—P. B. Ralls let contract to erect 3 dwellings.

Tex., Paris.—Mrs. B. S. High let contract to G. N. Martin, Paris, to erect residence; 2 stories; brick veneer; clay tile roof; wood floors; electric lights; cost \$15,000; hot-water heat, \$1100; C. E. Curtis, Archt., Paris.

Va., Covington.—Paul Lacy let contract to C. B. Ergenbright, Covington, to erect residence.

Va., Richmond.—Jas. D. Cook will erect four 2-story brick residences on Elm St.; cost \$12,500; 20x30 ft.; brick; tin roof; rift grain pine floors; C. G. Morris, Contr., Addison St.; Carl Richmond & Sons, Architects, both of Richmond.

W. Va., Charleston.—John W. Sparks, 135 Bigley Ave., let contract to R. P. Givin, Charleston, to erect residence; cost \$10,000; Hugginbotham-Knapp, Architects, Charleston. (Previously noted.)

W. Va., Parkersburg.—J. Madison Jackson let contract to Burwell & Snodgrass, Parkersburg, to erect 12-room residence.

### GOVERNMENT AND STATE

Md., Indian Head.—Government.—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract at \$5322 to Richardson & Burgess, 1413 H St., N. W., Washington, D. C., to erect extension to building No. 102, Naval Proving Grounds; 20.4x30.9 ft.; corrugated steel on wood frame; concrete foundation; corrugated steel roof; sheet-metal lining; steam heat; electric lights; heat insulation; gas, air and electric service for general laboratory.

### HOSPITALS, SANITARIUMS, ETC.

Ky., Winchester.—Clark County Hospital Assn. let contract at \$14,175 to N. A. Powell, Winchester, to erect hospital; 2 and 3 stories; brick; heating equipment and elevator to cost \$1500 and \$1100, respectively; J. W. Crone, Archt., Winchester. (Lately noted.)

Md., Baltimore.—Hospital for Women of Maryland let contract to Edward Brady & Son, 1113 Cathedral St., Baltimore, to erect \$18,000 addition for nurses' home; 4 stories; brick; 47x32½x48 ft.

### HOTELS

Fla., Tampa.—Manivista Hotel Co., let contract at \$13,473.60 to C. T. Walker and H. A. Van Horssum, Tampa, for plumbing improvements to Tampa Bay Hotel.

N. C., Durham.—J. H. and M. D. Harris let contract to O. F. Wilkerson, Durham, to erect store and hotel building; 66x90 ft.; brick; gravel roof; rift pine floors; steam heat; electric and gas lights; cost \$20,000. (Lately noted.)

Okla., Tulsa.—Townley Bros. let contract to erect store and hotel building. (See Stores.)

Va., Hopewell.—Stuart Hotel Corp., Lynchburg, Va., let contract to Eppes-Vaughan Construction Co., Hopewell, to erect hotel; 5 stories; fireproof; 150 rooms; elevator; cost \$150,000. (Previously noted.)

W. Va., Fairmont.—Fairmont Hotel Co., Brooks Fleming, Prest., will soon call for bids to erect hotel; steel frame; fireproof;

135x150 ft.; 150 bedrooms with bath; cost \$400,000; lower floor for several stores; let contract to Barber & Ross, 614-22 11th St. N. W., Washington, D. C., for steel frame and its erection; Milburn, Heister & Co., Archts., 710 14th St. N. W., Washington. (Previously noted.)

### MISCELLANEOUS

Fla., Jacksonville.—Pavilion, etc.—Jacksonville Ferry & Land Co., Harry E. Hoyt, V.-P., let contract to erect swimming pool and dance pavilion; pool of concrete construction; 70x130 ft.; dance hall adjoining pool, 115x115 ft.

S. C., Camden.—Stables and Grandstand.—C. M. Taintor let contract to W. G. Adams, Camden, to erect stables and grandstand in Kirkwood Hts.; plans call for grandstand, 60 ft.; 7 tiers of seats to accommodate 250; stable, 32x52 ft.

### RAILWAY STATIONS, SHEDS, ETC.

Ga., Albany.—Albany Transit Co. let contract to R. S. Smith, Albany, to erect car barn; 30x165 ft.; sheet iron; construction begun.

Okla., Oklahoma City.—Ardmore Ry. Co., let contract to I. M. Putnam, Ardmore, to erect street car sheds and shops; 40x155 ft.; 1 and 2 stories; fireproof; corrugated iron and other fireproof roofing; dirt and concrete floors. Address contr. (Lately noted.)

W. Va., Clarksburg.—Monongahela Valley Traction Co., Fairmont, W. Va., let contract to E. Elford, Columbus, Ohio, to erect interurban station; 77x82 ft.; 3 stories and basement; concrete and brick; composition roof; concrete slab floors; steam heat; electric lights; freight elevator; cost \$70,000; Willour J. Watson, Archt., Cleveland, Ohio. Address E. B. Moore, Gen. Mgr., Fairmont. (Lately noted.)

W. Va., Handley.—Chesapeake & Ohio Ry., F. I. Cabell, Ch. Engr., Richmond, Va., let contract Major Bros. & Carpenter of Clifton Forge, Va., to enlarge roundhouse.

### SCHOOLS

Fla., Curlew.—Pinellas County Board of Education let contract to J. F. Boyd & Son, Belleview, Fla., to erect school; Lester Avery, Archt., Clearwater, Fla. (Lately noted.)

Fla., Daytona.—Daytona Educational & Industrial Training School for Negro Girls let contract at \$26,222 to E. W. Parker, to erect industrial school; ordinary construction; composition roof; wood floors; steam heat; electric lights; W. B. Talley — H. F. Saxelby, Architects, Jacksonville. (Previously noted.)

Fla., Jacksonville.—Board of Public Instruction of Duval county let contract to F. W. Long & Co., 434 E. Bay St., Jacksonville, to erect school at 21st and Walnut Sts.; main building 227x67 ft.; 2 stories; auditorium 42x75 ft.; brick bearing walls; reinforced concrete floors; composition shingle, tar and gravel roof; concrete floors with wood finish; cost \$55,000, exclusive of plumbing and heating; Rutledge Holmes, Archt., Jacksonville. Address contractors. (Lately noted.)

Fla., Miami.—Dade County Board of Public Instruction let contract to H. L. Clark & Son, Miami, to erect graded and high school for Silver Palm Dist.; reinforced concrete; cost \$21,610, exclusive of furniture; A. E. Lewis, Archt., Miami.

Fla., Ozone.—Board of Public Instruction of Pinellas County let contract to Tarpon Construction Co., J. N. Cardy, Mgr., Tarpon Springs, Fla., to erect school; brick veneer; Lester Avery, Archt., Clearwater, Fla. (Previously noted.)

Fla., Tampa.—Sacred Heart College has plans by Fort & Parslow, Curry Bldg. Tampa, for building at Florida Ave. and Madison St. and let contract at about \$10,000 to G. A. Miller, Tampa, for reinforced concrete frame work, 97.6x86 ft.; 4 stories; fireproof; reinforced concrete curtain walls; promenade tile roof; gas heat; city lighting; cement tile sidewalks; dumbwaiter; cost \$45,000; all work to be let by owner through architects. (Noted in Feb.)

Ga., Entonton.—City has plans by Chas. Edward Choate, Candler Bldg., Atlanta, and let contract at \$23,000 to Little & Phillips Cordele, Ga., to erect school building; separate bids for heating and plumbing. (Previously noted.)

Ga., Nawnan.—Board of Education let contract at \$35,000 to A. C. Knight, Albany, Ga., to erect school; plumbing and heating contracts not let; brick; granite trimmings; 10 rooms; completion by Dec. 15; Haralson Bleckley, Archt., Atlanta. (Previously noted.)



bath; cost \$1,000; let 11th St. N. frame and o. Archts. Previously

—Jackson. D. Hoyt, building pool concrete adjoining

ndstand. —G. Adams, ndstand in rstand. (date 29; let con- erect car nstruction

Ry. Co., dmore, to 5x155 ft.; ated iron and coaly noted.)

la Valley contract erect in- ries and mposition n heat; cost \$70; Cleveland, n. Mgr.

Ohio Ry., Va., let of Chf- use.

board of d and S. er Avery, noted.)

ional & Girls urker, to con- struct; steam —H. F. reviously

ble In- tract to Jackson- Walnut stories; walls; on shi- ne floors nsive of Holmes, ractors.

of Pub- Clark and high inforced t furn-

struction Tarpon Tarpon veneer; a. (Pre- ge has Bldg. re, and \$10,000

ed con- and fire- walls; t light- walter; owner

(Chas. ra, and Phillips; sepa- (Pre-

et con- y. Ga- ng cons; 10 tralson riously

Ky., Bardwell. — Board of Education let contract at \$14,138 to E. J. Roper, Bardwell, to erect school; 8 rooms; brick; Barrett specification roof; wood floors; electric lights; hot-air heating plant to cost \$1000; G. Tandy Smith, Jr., Archt., 1017 City National Bank Bldg., Paducah, Ky. Address contractor. (Previously noted.)

N. C., Huntersville.—Huntersville School dist. let contract to L. L. Hunter, Charlotte, N. C., to erect high school; 12 rooms; music rooms, auditorium to seat 750; brick; slate roof; steam heat; cost \$20,000. (Previously noted.)

N. C., Mt. Airy.—City let contract to C. A. Kline, Carthage, N. C., to erect high school; 6 classrooms; auditorium to seat 500; brick; tar and gravel roof; steam heat; cost \$20,000; Northrup & O'Brien, Archts., Winston-Salem, N. C. (Previously noted.)

Okl., Bessie.—School Board let contract to C. F. Kenner, to erect school; brick and mill construction; gravel roof; joint floors; cost \$10,000; C. E. Hair & Co., Archts., Oklahoma City. (Previously noted.)

Okl., Halleyville.—School Dist. No. 11 let contract to R. E. Love, Rush Springs, Okla., to erect 4-room addition to high school; brick; tin shingle roof; pine floors; also let contract at \$800 to H. Lindsey, Halleyville, for steam-heating plant; C. E. Hair Co., Archts., Oklahoma City. Address Contr. (Previously noted.)

Okl., Rosston.—School Board let contract to M. T. Murray, Altus, Okla., to erect school; 78x48 ft.; 2 stories and basement; ordinary construction; pitch and gravel roof; wood floors; cost \$12,500; steam heat, \$1200; Hawk & Parr, Archts., Oklahoma City. (Previously noted.)

S. C., Piedmont.—School Board let contract to Builders' Lumber & Supply Co., Anderson, S. C., to erect school near Piedmont; 50x50 ft.; 2 stories; wood; metal shingle roof; cost \$4750; construction begins June 1. Address contractor. (Lately noted.)

S. C., Hebron.—Trustees, P. B. Smith, Chmn., Bishopville, S. C., R. No. 5, let contract to W. W. Blair, Chester, S. C., to erect school; 51x72 ft.; 6 classrooms and auditorium; ordinary brick and frame; vulcanite shingle roof; wood floors; stoves; slate blackboards; cost \$8000; W. D. Harper and L. M. D. Hicks, Archts., Florence, S. C. Address contractor. (Lately noted.)

Tenn., Kingston.—County let contract at about \$18,000 to Rogers & Co., Chattanooga, to erect high school, exclusive of plumbing and furnishings; plans by R. F. Graf & Son, Knoxville. (Previously noted.)

Tenn., Millington.—School Board let contract to J. E. Hollingsworth & Co., Memphis, to erect school; 200x45 ft.; 2 stories; brick walls; tile partitions; gravel roof; concrete floors; steam heat; cost \$54,000; lighting plant, \$1800; Harker & Cairns, Archts., Memphis. (Lately noted.)

Tex., Austin.—School Board let contract at \$21,000 to Van Horn-Shaw Construction Co., Fort Worth, to erect addition to and remodel Pease school; 6 rooms; walls of entire building stuccoed; new stairways and flooring; heating system; toilet-rooms, etc.; Dennis R. Walsh, Archt., Austin; also let contract for heating in Metz and Mathews schools at \$2664 to John L. Martin, Austin. (Lately noted.)

Tex., Sherman.—North Texas College let contract to erect Leona Kimbley Hall for auditorium and studio; completion by Sept.

Va., Williamsburg.—William and Mary College let contract to Jesse Johnson, Norfolk, to erect dormitory; 400x100 ft.; 3 stories; brick and wood; slate roof; wood floors; cost \$18,449; Ferguson, Calrow & Wrenn, Archts., Norfolk. (Lately noted.)

## STORES

Fla., Daytona Beach.—Karl Edner let contract to R. R. Poston, Daytona Beach, to erect store and apartment building; 2 stories; first floor for stores; apartments above; cost \$9000.

Ga., Augusta.—J. B. White let contract to T. O. Brown & Son, Augusta, to erect 6 stores on Broad St.; cost \$18,125.

Ga., Butler.—O. Cox let contract to C. W. Bazemore, Butler, to erect brick store building.

Mo., St. Louis.—Fredonia Real Estate Co. let contract to B. J. Charleville, St. Louis, to erect 2-story store building, 311-45 Locust St.; cost \$30,000.

N. C., Burlington.—Ralph Department Store let contract to Bryan & Love, Burlington, to erect store building; brick.

N. C., Durham.—J. H. and M. D. Harris

let contract to erect store and hotel building. (See Hotels.)

N. C., Durham.—O. T. Carver let contract to N. Underwood, Durham, to remodel Pleasant Bldg., Corcoran and Parish Sts.; outside walls stuccoed; interior repainted; plate-glass window; elevator.

Okl., Tulsa.—Townley Bros. let contract to R. E. Wilder, 615 W. 4th St., Tulsa, to erect store and hotel building; 50x140 ft.; 3 stories; brick and steel; tar and gravel roof; concrete and wood floors; cost \$30,100; lighting, \$1500; J. P. Curtin, Archt., Tulsa. (Lately noted.)

Tex., Mexia.—Mrs. M. B. Kemp let contract to Thos. W. Deming, Mexia, to erect 2-story business building; Mexia-made brick; 25x15 ft.; cost about \$10,000.

Tex., Post.—J. D. Hume has plans by R. E. Gilmore, Post, and let contract to J. M. Williams, Lamesa, Tex., to erect 2-story business building; 40x100 ft.; cost \$10,500; contractor will purchase materials, which call for brick, asphalt and gravel roof metal ceiling, plaster, plate and prism glass, electric fixtures, etc.

Tex., San Antonio.—J. H. Salling, 701 Dallas St., let contract to J. P. Harvey, San Antonio, to erect store building lately noted; 59x40 ft.; hollow tile; gravel roof; wood floors; cost \$4500; electric lights \$100;

E. P. Behles, Archt., 325 Hicks Bldg., San Antonio. (See Machinery Wanted—Ice Machinery.)

Tex., Wichita Falls.—Perkins-Timberlake Co. let contract to erect mercantile building; 50x150 ft.; 2 stories and basement; tapestry brick finished in marble; brick; composition roof; wood floors; Field & Clarkson, Archts., Wichita Falls. (Lately noted.)

Tex., Winona.—R. T. McClung let contract to erect 2-story brick business building.

W. Va., Fairmont.—Fairmont Hotel Co. let contract for steel frame and erection of same for hotel and store building. (See Hotels.)

## THEATERS

Tex., Smithville.—Star Theater Co. let contract to M. M. Turney, Smithville, to erect motion-picture theater; brick; stucco front; metal roof; wood floors; cost \$5000; lighting plant, \$300; H. W. Clark, Archt., Smithville. Address Contr. (Lately noted damaged by fire.)

## WAREHOUSES

N. C., Wilmington.—J. Allan Taylor let contract to R. H. Brady, Wilmington, to erect 1-story warehouse; cost \$500.

Va., Petersburg.—Virginia Feed & Grain Co. is erecting warehouse; concrete and steel; concrete foundation; 5 or 6 stories; Hancock & Co., Contrs., Lynchburg, Va.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

## "WANTS"

**Air Compressor.**—Chas. J. Geohagan, 1 N. 20th St., Birmingham, Ala.—Air compressor; steam driven; straight line; capacity 500 to 600 ft. per minute.

**Automobile Truck.**—O. W. Clayton, Brevard, N. C.—Automobile truck for hauling lumber, wood, etc.

**Blowers (Turbine).**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 4 sets steam turbine driven blowers, schedule 9718, delivery Charleston.

**Boilers.**—Clarence Keedy & Co., Hagerstown, Md.—Prices on boilers for hotel.

**Boilers.**—Adirondack Mining & Milling Co., 31 McKinley Bldg., Joplin, Mo.—125 H. P. high-pressure boilers.

**Boiler Settings.**—Houston County Oil Mill & Mfg. Co., W. A. Norris, Prest., Crockett, Tex.—Prices on 2 marine settings for two 72x18-ft. boilers; quick action.

**Boilers.**—Baltimore (Md.) Board of Awards, City Hall.—Bids until June 14 to furnish and install 2 boilers on iceboat Annapolis; proposals may be submitted on either or both of 2 types of boilers named in specifications; specifications and plans obtainable from Harbor Board, H. Kent McCay, Harbor Engr., Broadway Pier, for \$10.

**Brick.**—H. V. G. Cooley, Williamston, S. C.—Prices on very light impervious brick for store building.

**Bridge Construction.**—Campbell County Commrs., Rustburg, Va.—Bids until June 8 to construct steel bridge 55 ft. long over Ivy Creek, 4 mi. from Lynchburg; plans and specifications on file at Clerk's office, Rustburg, and with State Roads Commission, G. P. Coleman, State Highway Commr., Richmond; information on application.

**Bridge Construction.**—Escambia County Commrs., W. E. Rushing, Judge of Probate, Brewton, Ala.—Bids until July 3 to construct 100-ft. low truss steel highway bridge, 20 ft. wide, 10 tons capacity, riveted and on concrete foundation, over Burnt Corn Creek; also separate bids for steel span only; information from Judge of Probate.

**Bridge Construction.**—Floyd County Commrs., Rome, Ga.—Bids until June 12 to construct 2 bridges, estimated cost \$130,000; each, 3-span concrete arch bridge, of about 400 ft. total length; W. C. Spiker, Engr., Candler Bldg., Atlanta, Ga.; Kieffer Lindsey, County Engr., Rome; plans and specifications at Courthouse, Rome.

**Buttons.**—Opelika Overall Co., W. O. Brownfield, Prest., Opelika, Ala.—Addresses of manufacturers of buttons.

**Building Materials.**—Clarence Keedy & Co., Hagerstown, Md.—Prices on building material for brick hotel; 36x175 ft.

**Building Materials.**—Geo. T. Merl-wether, Lockney, Tex.—Prices on brick, plate glass, tar, tar roofing and metal ceilings for six \$5000 store buildings.

**Cars.**—See Railway Construction Materials, etc.—Ardmore Railway Co.

**Cement.**—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 13 for delivering cement at Naval Academy, Annapolis, Md.; also for cement at Navy-yard, Norfolk; also for cement at Navy Aeronautic Station, Pensacola.

**Cement.**—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 13 for delivering cement and handles for deck scrubbing brushes at Navy-yard, Charleston, S. C. Apply for proposals to Supply Officer, Navy-yard, Charleston, S. C., or to Bureau.

**Concrete Work.**—Levee Board, T. G. Dabney, Ch. Engr., Clarksdale, Miss.—Bids until June 6 to construct following concrete work: Plain concrete slab with reinforcement on front slope of levee in following localities: On levee sections 34 and 35, length 2200 ft.; on sections 54 and 55, length 6600 ft.; on sections 64 and 65, length 3750 ft.; on section 70, length 1600 ft.; concrete to be 3 in. thick, containing 35,000 sq. yds.; bids per sq. yd.; further information from Ch. Engr.

**Corn Mill.**—See Flour Mill, etc.—Walter Donovan.

**Cotton Machinery, etc.**—G. Dossa & Co., cotton merchants of Bombay and Kobe, P. O. Box 827, New York.—To act as agents in India of American manufacturers of ginning and pressing machinery, cotton mill machinery and of lubricating oils.

**Cotton Cloth.**—F. D. Boyden, manufacturers' agent, 197 Market St., Manchester, Eng.—To correspond with manufacturers of cotton cloth suitable for slipper making; this cloth called "Venetians;" made of hemp warp and cotton and woolen weft; in appearance imitates old-fashioned wool work; can find buyers for turnover more than 10,000 during a season; prices vary from 1 p. to 2-6 per yard; prepared to supply information as to widths, designs, etc.

**Crucibles.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 185 crucibles, schedule 9731, delivery Norfolk.

**Crusher.**—Jas. B. Payne, Box 576, Anniston, Ala.—Data and price on mill to crush mica.

**Drainage System.**—Bayou Paul Drainage Dist., G. W. Sittman, Prest., Burtville, La.—Data on methods and machinery for drainage construction.

**Drainage System.**—Custodian's Office, U. S. Postoffice, Lander, Wyo.—Bids until June 23 for change in drainage system at this building, in accordance with drawings Nos. 58A and M-359E and specification; copies obtainable.

**Drag-line Machine.**—M. M. Schiltz, Railroad Contr., Charlotte, N. C.—Small drag-line machine, weight 15 to 20 tons; 40 to 45-ft. boom; Haywood or Page bucket; first-class condition.

**Dredging.**—U. S. Engr. Office, 509 Custom-house, Baltimore, Md.—Bids until June 30 to dredge in Elk and Little Elk rivers, Md.; information on application.

**Driveway Extension, etc.**—Custodian's Office, U. S. Postoffice, Hot Springs, Ark.—Bids until June 21 to extend driveway, new curbs and grading at this building, in accordance with drawing 57A and specification; copies obtainable.

**Electric-light and Water Plant.**—J. M. Farrar, Marvell, Ark.—To correspond regarding granting franchise for light and water plant; 1000 population.

**Electric Equipment.**—Clarence Keedy & Co., Hagerstown, Md.—Prices on electric equipment for hotel.

**Electric Fixtures, etc.**—Cyril E. Daniel, St. Thomas, West Indies.—To represent (for Danish West Indies and Haiti) manufacturers of dry goods, wearing apparel, leather, food products, building materials, electric fixtures and fittings, etc.

**Electric Plant, etc.**—Adirondack Mining & Milling Co., 31 McKinley Bldg., Joplin, Mo.—Direct-connected electric-light plant; 125-watt electric lamps; 150 H. P. high-pressure boilers; oil engine to pump oil from car to tank.

**Electrical Equipment, Hardware, Oils, etc.**—Panama Canal, Earl I. Brown, Gen. Purchasing Officer, Washington, D. C.—Bids until June 28 to furnish cast-iron lamp-posts, base sockets, porcelain receptacles, transformers, panel boards, lighting fixtures, electrical attachments, conduit and fittings, lock nuts, pipe straps, solder, electric cable, wire, pipe-bending machines, cable-reel wheels, turpentine, turpentine substitute, creosote oil, linseed oil, alcohol, etc.; blanks and general information relating to this circular (No. 1639) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash.

**Electrical.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 5000 solid arc lamp carbons and 10,000 ft. flexible cord for portables, schedule 9720, delivery Philadelphia; 50 parabolic searchlight mirrors, schedule 9718; 20,000 ft. double conductor wire and 47,000 ft. twin conductor wire, schedule 9732, delivery Brooklyn; panel, feeder and equipment, and 17,000 ft. weather-proof copper wire, schedule 9710, delivery Washington; 15,000 ft. ebonite tubing, schedule 9715, delivery Newport, R. I.; 12 1/4 H. P. portable ventilating sets, schedule 9732, delivery Norfolk.

**Electrical Machinery.**—City Commrs., Clarksdale, Miss.—Bids, directed to A. C. Tuttle, City Clerk, until June 13 for furnishing f. o. b. Clarksdale, Miss., the following: 500 K. W. (625 K. V. A.) 3-phase 60-cycle 2300-volt A. C. turbo-generator unit with direct-connected 125-volt exciter, including jet type condenser, switchboard panel; cooling tower for the equipment; 200 K. W. direct-connected uniflow engine and generator with 125-volt exciter, switchboard panel, instruments and equipment; specifications and information obtainable from W. S. Bobo, City Engr., and W. W. Pointer, Supt. of Water and Light Dept.

**Electrical Machinery.**—Columbia Water & Light Co., J. S. Robinson, Secy. and Supt., Columbia, Tenn.—Prices on high efficiency prime mover, about 500 H. P. capacity; generator of similar capacity; electrically-driven pumps of about 1,000,000-gal. daily capacity.

**Elevators (Electric, Passenger).**—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids opened June 22 to install electric passenger elevator in U. S. courthouse and postoffice, Opelika, Fla.; also for electric passenger elevator in U. S. postoffice, courthouse and custom-house, Cor

pus Christl, Tex.; copies of drawings and specifications on request.

**Engines (Hoisting).**—Chas. J. Gehegan, 1 N. 20th St., Birmingham, Ala.—Two 7x10-in. and two 8½x10-in. double-cylinder double-drum hoisting engines with boilers.

**Engine.**—See Flour Mill, etc.—Walter Donovan.

**Filing Machines (Saw).**—Frank H. Bearden, Bethune, S. C.—Correspondence with manufacturers of carpenters' hand-saw filing machines.

**Fire Apparatus.**—City of Columbia, S. C., office of City Clerk, City Hall.—Bids until June 13 to furnish motor-driven fire apparatus; bids on triple combination and combination hose and pumping engine, 500 to 900 gals. capacity, with complete specifications, including weight and official pumping tests of each type offered and necessary equipment thereon; C. M. Asbill, Councilman, Supt. Fire Dept.

**Fire Engines (Chemical).**—City of Swainsboro, Ga., C. H. Thompson, Mayor.—Prices on chemical engine.

**Fire Escapes.**—Trustees Tunica County (Mississippi) Agricultural High School, Tunica, Miss.—Let contract July 3 at office L. C. Canon, Supt., to erect 2 fire escapes to three-story school building.

**Flour Mill, etc.**—Walter Donovan, Lampasas, Tex.—Prices on 50-bbl. corn and flour mill, with feed equipment and steam or oil engine; new or second-hand.

**Gasoline-saving Device.**—N. F. Cheairs, Dothan, Ala.—Correspondence with manufacturers with view to placing order for making gasoline-saving device, consisting of small air valve to be screwed in manifold; ¼-in. nickel pipe, and nicked button.

**Gasoline Machinery.**—Kayco Oil Co., John C. Collins, Prest., Newkirk, Okla.—Data and prices on machinery to manufacture casing-head gasoline from gas.

**Glass.**—See Building Materials.—Geo. T. Meriwether.

**Gravel.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 100,000 lbs. Millville gravel, schedule 9731, delivery Charleston.

**Handkerchief Machinery.**—D. B. Mull, Icard, N. C.—Data and prices on machinery for manufacturing ladies' handkerchiefs.

**Heating Plant.**—Dr. D. I. Blanford, 2555 Southwest Blvd., Kansas City, Mo.—Prices on hot-water heating plant for \$5000 residence.

**Heating, Plumbing and Wiring.**—City of McComb, Miss., O. B. Quinn, Mayor. Bids until June 20 to furnish material and install steam heating, plumbing and electric wiring in school building; plans and specifications on file at office Engr., Xavier A. Kramer, Magnolia, Miss., and copies of plans, forms, etc., obtainable from Engr. for \$10.

**Ice Machinery.**—J. H. Salling, 701 Dallas St., San Antonio, Tex.—Prices on ice machinery; small equipment for meat market.

**Levee Construction.**—Mississippi Levee Commrs., W. L. Thompson, Ch. Engr., Greenville, Miss.—Bids until June 12 to construct 512,000 cu. yds. levee work; further information on request.

**Levee Construction.**—Third Mississippi River Dist., P. O. Box 401, Vicksburg, Miss.—Bids until June 10 to construct 243,000 cu. yds. levee; information on application.

**Levee Construction.**—Plum Bayou Levee Dist., N. E. Benkley, Prest., England, Ark.—Bids until June 2 to enlarge 6 mi. of levee on riverside slopes; 90,000 cu. yds.; may let contract on yardage basis or upon basis of payment by day; information from Dickinson & Watkins, Engrs., State Bank Bldg., Little Rock, Ark.

**Lumber.**—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 13 for delivering white oak at naval station, New Orleans.

**Machine Shops.**—See Gasoline-saving Device.—N. F. Cheairs.

**Machinery, etc.**—Enrico Fornero, Corso Romana 78, Milan, Italy.—To represent manufacturers of office and stationery articles; bicycles and automobiles; metals, hardware and machinery.

**Machinery and Tools.**—Ignacio Anita (of Anita Y Charola, machinery and tools, Elbar, Spain), 230 E. 29th St., New York.—To buy machinery, tools and steel, selling same in Spain on own account; have traveling salesmen to cover the country and warehouse with sample-rooms in United States to obtain best possible prices and become

intimately acquainted with goods manufactured in the States suitable for export; specialize in lathes, shapers, milling machines, drills, all kinds of tools and steel for tools.

**Machine Shop Equipment.**—See Railway Construction Materials, etc.—Ardmore Railway Co.

**Machinery, etc.**—Segesser & Ericks, Importers and exporters, Bolto Postale No. 580, Odessa, Russia.—To correspond relative to introduction of American manufacturers of aluminum in ingots and sheets; zinc and lead in ingots and sheets; rapid steel and ferro-alloys; copper in ingots and sheets; nickel in cubes and sheets; mechanical tools and chemical products; cutlery; files; grinding wheels; oil motors; mechanical machines; electric motors; automobiles; ice machines, etc.; in fact, every useful article manufactured in America can be sold here; offers from American dealers c. l. f. Vladivostok or f. o. b. New York, payment cash against documents in a New York bank.

**Mail Boxes.**—United States Steel Ware Co., 309 4th Ave., Pittsburgh, Pa.—Addresses of manufacturers of mail boxes for rural deliveries.

**Metals.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 5000 lbs. ½ in. diam. spinning brass rod and 500 lbs. self-fusing solder, schedule 9715, delivery Newport, R. I.; 33,130 lbs. sheet lead, schedules 9711 and 9725, delivery Washington, Norfolk; 4800 lbs. spelter solder and 3900 lbs. round strip solder, schedule 9725, delivery Brooklyn; 30,000 lbs. steel forgings, schedule 9702, delivery Mare Island, Cal.; 64,900 lbs. black and galvanized sheet steel, schedule 9711, delivery Washington.

**Metal Ceilings.**—See Building Materials. Geo. T. Meriwether.

**Metal Novelties.**—Osse Davis, Box 238, High Point, N. C.—Addresses of manufacturers of metal novelties.

**Mixer (Concrete).**—Pennsylvania Equipment Co., Philadelphia, Pa.—Second-hand ¾-yd. Ransome concrete mixer with boiler, engine and pivot-loading hopper; prefer this portable with wheels, but would consider it on skids.

**Mixers (Concrete).**—See Road Machinery.—N. C. Hughes, Jr.

**Mixer (Concrete).**—Percy Lumley, Greenwood, S. C.—Prices on concrete mixer; capacity 5 to 7 or 8 to 10 cu. ft.

**Olecloth.**—Columbus Mfg. Co., Columbus, Miss.—Addresses of manufacturers of enamel or olecloth.

**Oil Presses, etc.**—R. C. Conner, Prest. Enterprise Cotton Oil Co., Enterprise, Ala.—Data and prices on machinery to extract oil and greases from city garbage.

**Oils, Paints, etc.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 5000 lbs. battery chloride ammonium, schedule 9731; 600 gals. grade 1 glycerin, 200 gals. mineral sperm oil, schedule 9722; 100 gals. lard oil, 60,000 lbs. red mercuric oxide, 6000 gals. turpentine, 1000 gals. aluminum varnish and 20,000 lbs. dry metallic zinc, schedule 9727, delivery Norfolk; 10,000 lbs. muriatic acid, 550 lbs. chrome green in oil, 1500 lbs. dry lampblack and 3000 lbs. tallow, schedule 9727, delivery Philadelphia; 35,000 lbs. hard, brown and white glue, schedule 9727, delivery Portsmouth, N. H.; 20,000 lbs. silicate of soda, schedule 9731, delivery Boston.

**Paving.**—Town of Cleveland, Miss., L. M. Guynes, Clerk.—Bids until June 6 to gravel and oil sections of Sharp and Leflore Aves. and South Court St.; plans and specifications on file with Town Clerk; cost, including gravel, \$16,000.

**Paving.**—Chas. E. Bolling, City Engr., City Hall, Richmond, Va.—Bids until May 31 to pave 5th St. from Main to Cary Sts. with granite spall or asphaltic concrete paving; proposal forms, specifications, etc., obtainable from City Engr.

**Paving.**—City of Jackson, Tenn., Hu M. Harris, Commr. of Streets.—Bids until June 27 to construct 55,000 sq. yds. street paving; vitrified brick monolithic construction; John L. Williams, Engr.; Lawrence Taylor, Mayor.

**Paving.**—Board of Commrs., Fort Worth, Tex.—Bids until June 6 to pave Main St. from Weatherford to Front St.; creosoted wood block, vitrified brick, 3-inch vertical fiber brick, bitulithic, sheet asphalt and vibrolithic pavement; proposed forms and specifications from F. J. Von Zuben, City Engr.

**Paving.**—Commission of Roads and Bridges, R. B. Preston, Road Engr., 401 Commercial Bldg., Portsmouth, Va.—Bids until June 6 to construct 8000 sq. yds. concrete sidewalks in Port Norfolk; specifications and information from Commission.

**Paving.**—City Commrs., Tulsa, Okla.—Bids until June 5 to pave and otherwise improve sections of 12th St., Detroit, Elwood and Illinois Aves., etc.; plans and specifications on file with Frank Newkirk, City Auditor.

**Paving.**—W. E. Chambers, Purchasing Agt., Atlanta, Ga.—Bids until June 2 to pave with bituminous macadam Candler St. from DeKalb to McLendon St., 2750 sq. yds.; Greenwich St. from Dargan to Holderness St., 2100 sq. yds.; specifications from Mr. Chambers.

**Paving.**—Ralph L. Rizer, City Engr., City Hall, Cumberland, Md.—Bids until June 3 to pave 14 streets, aggregating 27,210 sq. yds. brick paving on concrete base and 11,450 sq. yds. concrete paving; plans and specifications from City Engr. for \$1.

**Paving.**—City of Miami, Fla., W. B. Moore, City Clerk.—Bids until June 15 to grade and pave with asphaltic concrete with binder course on concrete foundation, with concrete gutter or curb and gutter as specified, under Highway Improvements Nos. 46 to 51, about 60,000 sq. yds. pavement.

**Paving.**—Mayor and Commrs., Dunn, N. C.—Bids until June 12 (change of date) on 17,000 sq. yds. brick, asphalt, bitulithic or other pavement; 3000 lin. ft. concrete curb and gutter; 1000 sq. yds. sidewalk; drainage, etc.; plans and specifications on file offices of H. S. McKay, Clerk, and of Gilbert C. White, Engr., Durham, N. C., and obtainable from Engr. for \$10.

**Paving.**—Mayor and City Council, Gainesville, Ga., R. E. Andoe, Clerk of Council.—Bids until June 10 to pave Broad and Washington Sts. with brick, concrete asphalt or other material; about 20,000 yds.

**Paving.**—Baltimore (Md.) Board of Awards, City Hall.—Bids until June 7 to grade, curb and pave following streets: Homestead St. from Harford Rd. to Polk St.; Polk St. from Montpelier St. to Gorsuch Ave.; Montpelier St. from Harford Rd. to Polk St.; Taylor St. from Homewood Ave. to Bartlett Ave.; 8500 sq. yds.; specifications from Commrs. for Opening Streets, John H. Robinette, Prest., for \$5.

**Piping.**—Huettel Coal & Coke Co., Norton, Va.—1500 ft. 2-in., 1500 ft. 1½-in. and 2500 ft. 1-in. black water pipe; new or good second-hand; complete with couplings and new threads; delivery Norton.

**Piping.**—Sewerage and Water Board, F. S. Shields, Secy., 508 City Hall Annex, New Orleans, La.—Bids until July 18 for riveted steel pipes for drainage system, contract 78-D; plans and specifications obtainable at Room 503, City Hall Annex; Geo. G. Earl, Gen. Supt.

**Pipe and Fittings.**—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 48 ½-in. self-closing brass cocks and 50 composition reducing couplings, schedule 9729, delivery Philadelphia; 6750 lbs. lead pipe, schedule 9711, delivery Washington; 19,000 ft. lap-welded steel pipe, schedule 9716, delivery Brooklyn, f. o. b. works; 5300 ft. lap-welded steel tubing, schedule 9729, delivery Brooklyn; 2250 lbs. rubber pump valves, schedule 9729, various deliveries.

**Pneumatic Tube.**—Ford Motor Co., Houston, Tex.—Names and addresses of manufacturers of pneumatic tube service.

**Pump.**—Adirondack Mining & Milling Co., 31 McKinley Bldg., Joplin, Mo.—Oil engine to pump oil from car to tank.

**Pumps.**—See Electrical Machinery.—Columbia Water & Light Co.

**Rails.**—Snell & Hamlett, St. Petersburg, Fla.—1 to 5 carloads second-hand rails, 56 or 60 lbs.; first-class relays, equal to Hunt's inspection, 30 ft.; state price delivered f. o. b. St. Petersburg. Also wants addresses of dealers in new and second-hand rails at Jacksonville, New Orleans, Savannah, Mobile and Atlanta.

**Railway Construction Materials, etc.**—Ardmore Railway Co., I. M. Putnam, Gen. Contr., Ardmore, Okla.—Prices on all street railway materials for construction, operation, car repairs, car erection, hand cars, track maintenance, etc.

**Road Construction.**—Highway Dept., Board of State Engrs., Room 104, New Orleans Court Bldg., New Orleans, La.—Bids until June 5 to construct following: Section Shreveport-Homer highway, Bossier parish, 13.4 mi. gravel; section Columbia-Colfax highway, La Salle parish, .2 mi. earth; information as to location, character of work, etc., obtainable on application from Highway Dept.; W. F. Atkinson, State Highway Engr.

**Road Construction.**—Commission for Purchase and Improvement of Roads, Portsmouth, Va.—Bids until June 2 to improve 3.42 mi. of roads between Armstead Sliding

and Churchland; bituminous surface treatment, bituminous penetration macadam or concrete; plans and specifications on file at Clerk's office, Portsmouth, and office of State Highway Commission, Richmond, Va.; specifications furnished by G. P. Coleman, State Highway Commr., Richmond.

**Road Construction.**—Bliss County Commissioners, Centerville, Ala.—Bids until June 29 to grade, drain and surface with gravel part of Randolph and Maplesville Rds.; State-aid; specifications and profiles with W. S. Keller, State Highway Engr., Montgomery, Ala., and at Courthouse, Centerville.

**Road Construction.**—Clarke County Commrs., Clayton Foscue, Judge of Probate, Grove Hill, Ala.—Bids until June 20 to grade, drain and surface with sand clay portions of proposed Jackson highway from Thomasville to Fulton, Fulton through Grove Hill to Jackson, and from Jackson to river; plans and specifications on file in Probate office, Grove Hill, or at office of A. L. Smith, Engr., Thomasville, Ala.

**Road Construction.**—Supervisors Permanent Roads, Road Dist. No. 1, Athens, Tex. Bids until June 10 to construct 40 mi. sand clay roads; A. B. Astell, Engr., Athens; C. D. Owen, County Judge.

**Road Construction.**—Lamar County Commrs., Vernon, Ala.—Bids until June 21 to grade, drain and gravel part of Sulligent and Detroit Rds.; State-aid; also at same time bids to construct 11 mi. of Vernon and Columbus (Miss.) Rds.; profiles and specifications on file with County Engr. at Vernon and with State Highway Dept., W. S. Keller, State Highway Engr., Montgomery, Ala.

**Road Construction.**—Monroe County Pike Commrs., L. A. Hunt, Secy., Madisonville, Tenn.—Bids until June 9 to improve roads; to include 73 mi. grading and 90 mi. of macadam and chert; plans and specifications on file at Engr.'s office, Madisonville; award of contract subject to sale of bonds; total issue \$325,000, of which \$150,000 has been sold and \$175,000 will be sold as work progresses.

**Road Construction.**—Washington County Commrs., D. A. Wolfinger, Clerk, Hagerstown, Md.—Bids until June 15 to construct 3.58 mi. Boonsboro and Williamsport Rds.; bids to be made on blank forms obtainable from State Roads Commission, 601 Garrett Bldg., Baltimore; plans can be seen and forms of specifications and contract obtained for \$1 from State Roads Commission.

**Road Construction.**—Highway Dept., Board of State Engrs., Room 104, New Orleans Court Bldg., New Orleans, La.—Bids until June 12 to construct 65 mi. gravel roads in DeSoto parish and 12 mi. earth roads in Grant parish; information as to location, character of work, etc., obtainable from Highway Dept.; W. F. Atkinson, State Highway Engr.

**Road Construction.**—Alleghany County Road Directors, Cumberland, Md.—Bids until June 7 at Courthouse to build sections of State-aid highway—Williams Rd., about 0.51 mi.; Bedford Rd., 0.60 mi., and Boston-Pekin Rd., 2.22 mi.; further information with J. T. Edwards, Cumberland.

**Road Machinery.**—N. C. Hughes, Jr., Engr., Weldon, N. C.—Prices on standard road machine with scarifier attachment; steam roller; concrete mixer; wheelers, size 2½, capacity 15 cu. ft.; for road construction, Littleton township, Halifax County.

**Roofing (Tar).**—See Building Materials. Geo. T. Meriwether.

**Seawall Construction.**—W. G. Davis, Mayor, Mandeville, La.—Bids until June 6 to repair portion of seawall in front of city damaged by storm of Sept. 29, 1915, and complete seawall and fill in front of city; plans and specifications from Mayor for \$5.

**Sawmill.**—Cooper Construction Co., 446 Baxter Ave., Louisville, Ky.—Sawmill machinery for resawing old timbers.

**Scales (Automatic Weighing and Recording).**—Treasury Dept., Office Electrical Engr. in Charge Automatic Scales, Washington, D. C.—Bids opened June 14 to furnish and install complete automatic weighing and recording scales; copies of specifications obtainable.

**Sewer Construction.**—City of Carterville, Mo.—Bids until June 1 to construct 8-in. line sewer; cost \$2211.90; Frank Newton, Engr., Carthage, Mo.

**Sewer Construction.**—Mayor and Board of Commrs., Fort Worth, Tex.—Bids until June 6 to construct storm-sewer drainage system on Main St. from Weatherford to Front St.; 538 lin. ft. 24-in. vitrified sewer pipe, 497 lin. ft. 18-in. vitrified sewer pipe, 2494 lin. ft. 15-in. vitrified sewer pipe, 1854 lin. ft. 12-in. vitrified sewer pipe, 48 specials, 58 concrete inlets, 9 manholes, 1878 cu. yds.



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of excavation; plans and specifications on file with F. J. Von Zuben, City Engr.; M. P. Harwood, Jr., City Secy.

**Sewer Construction.**—City of McComb, Miss. O. B. Quinn, Mayor.—Bids until June 20 for furnishing materials and building sanitary sewer system and sewage-disposal plant; certified check, \$500; plans and specifications on file at office City Clerk and Xavier A. Kramer, Engr., Magnolia, Miss.; copies, etc., upon application to Engr.; check for \$10 to guarantee return.

**Sewer Construction.**—Chas. E. Bolling, City Engr., City Hall, Richmond, Va.—Bids until May 31 to construct sewers and drains; proposal forms on application.

**Sewer Construction.**—City of Miami, Fla. W. B. Moore, City Clerk.—Bids until June 15 to construct Section 2 of Storm Sewer Dists. 1 and 2; about 1500 ft. 12-in., 544 ft. 15-in., 1181 ft. 18-in., 1938 ft. 22-in., and 965 ft. 24-in. vitrified pipe sewer; 666 ft. 24-in. 36-in., 350 ft. 36-in. 42-in., 1046 ft. 48-in. 42-in., 50 ft. 48-in. 24-in. and 100 ft. 48-in. concrete sewer, with 21 manholes; also construction of 6-in. house sewer connections along streets under Highway Improvements Nos. 46 to 51, and furnishing manhole and inlet castings, Storm Sewer Dists. 1 and 2 (section 2), about 31,000 lbs.

**Sewer-disposal Plant.**—Chester & Fleming, Engrs., Pittsburgh, Pa.—Bids on sewage-disposal plant, consisting of Inhoff tanks, sprinkling filters and chloride disinfection plant; for Kenneywood Park, Pa.

**Skidder.**—Bollinger-Franklin Lumber Co., Kosciusko, Miss.—Prices on 2-line rehaul skidder; may install same within next 6 or 8 months.

**Steel, Boiler Tubes, Pipe, etc.**—Panama Canal, Earl I. Brown, Gen. Purchasing Officer, Washington, D. C.—Bids until June 16 to furnish steel, boiler tubes, steel and iron pipe, chain, steel cable, electric cable, track bolts, brake-shoe bolts, brass tubing, eye-bolts, chisels, chucks, dies, pipe threading and cutting machine, sanitary fixtures, shower heads, brass siphons, flush pipe, pipe fittings, cocks, valves, lock nuts, esutcheons, steam gauges, engine lubricators, grease cups, oil cups, copper funnels, steel lockers, glass vault lights, spark plugs, dry coils, thermometers, cane ship fenders, rubber gaskets, inner tire tubes, and blueprint paper; blanks and general information relating to this circular (No. 1047) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Steel.**—See Machinery and Tools.—Ignacio Antuna.

**Steel Balls.**—Alexander Zacharion & Co., engineers, 54 Stadium St., Athens, Greece.—High carbon forged steel balls for cement mills; following quantities and dimensions: 12 tons 80 millimetres of diameter, 12 tons 60 millimetres of diameter, 6 tons 40 millimetres of diameter, 6 tons 30 millimetres of diameter; lowest possible c. t. f. Piraeus prices, including packing, marine and war insurance; state also shortest time for delivery.

**Structural Steel, Pipe, Tubing, Hardware, etc.**—Panama Canal, Earl I. Brown, Gen. Purchasing Officer, Washington, D. C.—Bids until June 26 to furnish structural steel, bronze wire cloth, soil pipe, wrought-iron or steel pipe, pipe fittings, brass tubing, brass clean-outs, floor drains, valves, cocks, lead pipe, lead traps, solder, pipe hangers, brass chain, shower heads, sanitary fixtures, range boilers, refrigerator traps, oakum, putty, door and window hardware, doors and sash, and lumber; blanks and general information relating to this circular (No. 1048) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Tanks.**—Wm. Seymour, 5117 Kenwood Ave., Chicago, Ill.—Two pressure tanks for sprinkler system.

**Tools.**—See Machinery and Tools.—Ignacio Antuna.

**Water-works.**—J. M. Farrar, Marvel, Ark.—To correspond regarding granting franchise for water and light plant; 1000 population.

**Wheels (Wire).**—C. H. Adams, Lake Placid, N. Y.—Quotations on 10-in. wire wheels; in lots of 100 or more; wants wheels such as used for baby carriages, go-carts, etc.

**Woodworking (Planing Mill, Coffin and Casket) Machinery.**—Talbotton Coffin, Casket & Mfg. Co., Talbotton, Ga.—Prices on equipment to manufacture high-

grade coffins and caskets; planing mill machinery.

**Woodworking Machinery.**—A. Jones, R. F. D. No. 3, Lynchburg, Va.—Spoke and handle lathe; second-hand.

**Woodworking (Spool) Equipment.**—Ivey Mfg. Co., Hickory, N. C.—Machinery to manufacture spools for textile mills.

**Woodworking Machinery.**—S. L. Williams, 703 Brevard St., Charlotte, N. C.—Catalogues and prices on woodworking machinery, including mortising and tenoning resaw, band saw, shaper, joiner or combination machine.

## RAILROAD CONSTRUCTION

### RAILWAYS

Ark., Ravenden Springs.—Construction of a railroad from Ravenden Springs to Ravenden, on the St. Louis & San Francisco R. R., 6 or 7 mi., is under way. J. B. Duval or Sam Kellett may give information.

Fla., Saint Cloud.—Central Florida Interurban Ry. Co. gives notice of application for charter to build an electric railway from Saint Cloud to Sanford, Dunnellon and Tampa; also through Volusia county to a point on the Atlantic Coast; also through Osceola and Brevard counties to some other point on the same coast. Total length of contemplated lines, 300 mi. Incprts.: Carl E. Carlton, Wm. S. Alyea and Wm. Hall.

Fla., Saint Johns Park.—Florida East Coast Railway Co. is considering request of residents that extension be built from San Mateo to Saint Johns Park, about 20 mi. E. Ben Carter, St. Augustine, Fla., is Ch. Engr.

Ga., Augusta.—Savannah River Terminal Co. is granted franchise to build connecting line from the Augusta & Summerville R. R. to the city wharf; also a connection with the Charleston & Western Carolina Ry. C. A. Wickersham is Pres.

Ga., Washington.—Washington & Lincoln R. R. Co. is reported to have let contract for 3 mi. additional of grade to beyond Metasville to the H. B. Hoppendietzel Co. of Macon, Ga.

Id., Big Pool.—Western Maryland Ry. has let contract to Mason, Hanger & Co. of Lexington, Ky., to build second track between Big Pool and Clearspring, Md., about 5 mi.; also to Claiborne, Johnston & Co. of Baltimore for second track between Hagerstown and Security, Md., 2½ mi.

Miss., McComb City.—The McComb City-Magnolia Light & Railway Co. is reported to have bought the Magnolia Electric Light Co.'s plant and is obtaining rights of way for its proposed interurban railway to connect Magnolia, Fernwood, McComb City and Summit, about 10 mi. A. H. Jones is Mgr.

Miss., Meridian.—S. A. Neville, V-P. Meridian & Deepwater Railway Co. is quoted that survey will begin June 1 from Meridian to Myrtlewood, Ala., about 45 mi., where connection will be made with Louisville & Nashville R. R. He is also V-P. of the Meridian & Memphis Railway, which is completing line to Sebastopol, Miss., and proposes to continue construction to connect with Illinois Central R. R. at Canton or Jackson, Miss. About \$1,000,000 is to be spent for construction of these lines within the next year.

N. C., Asheville.—Southern Railway will reballast and lay heavier rail on 321 mi. of its line between Asheville and Knoxville, Tenn. B. Herman, Washington, D. C., is Ch. Engr. Maint. of Way and Structures.

Okla., Henryetta.—Henryetta & Coal Fields R. R. Co. is chartered; capital \$100,000, which is estimated cost of construction; incorporators, R. D. Long, N. A. Gibson, Edgar Graham, Geo. H. Lessley and T. L. Gibson, all of Muskogee, Okla. Proposed line Henryetta to Kusa, Okla., 5 mi. Address Gibson & Hull, Muskogee.

S. C., Bowman.—Branchville & Bowman R. R. will, it is reported, be changed from narrow to standard gauge for its entire length, 12 mi. R. L. Patrick is Gen. Mgr. at Bowman.

Tenn., Lenoir City.—Southern Ry. is reported to have bought 39 acres of land adjoining the Lenoir City Car Works and will build storage tracks thereon for about 1050 freight cars. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tenn., Shelbyville.—Nashville, Chattanooga & St. Louis Ry. is reported to have finished tracklaying on its 2-mi. spur to Sylvan Mills.

Tex., Beaumont.—Beaumont Chamber of Commerce has appointed T. S. Reed, Sr., Chrmn. of a special committee to push plans

for the proposed railroad from Beaumont to Saratoga, Tex., and other points. C. B. Bone is Secy. Chamber of Commerce.

Tex., Roaring Springs.—Quannah, Acme & Pacific Ry. is reported making location survey for its projected extension from Roaring Springs to Roswell, N. M., about 200 mi. A. F. Sommer is Res. Mgr. at Quannah, Tex.

Tex., Corpus Christi.—Ormsby McIlharg of New York, according to a local report, has reached Corpus Christi to start construction of the interurban railway to Ward's Island, 10 mi., to be finished this summer.

Tex., Texarkana.—St. Louis, Iron Mountain & Southern R. R. (Missouri Pacific System) is laying additional tracks and making other yard improvements at Texarkana at an estimated cost of about \$75,000. E. A. Hadley is Ch. Engr. at St. Louis, Mo.

W. Va., Clarksburg.—Monongahela Valley Traction Co. is reported to have awarded contract to Keeley Bros. of Clarksburg to grade the Limestone cut-off of the Wilsonburg line. Estimated cost of construction about \$18,000.

W. Va., Wheeling.—Wheeling & Eastern R. R. Co., capital \$23,000,000, is granted charter to build its proposed line from Wheeling to Majorsville, Waynesburg, McCann's Ferry and Millsboro, Pa., about 60 or 70 mi. Incorporators, Isaac M. Scott, Pres. Wheeling Steel & Iron Co. and others of Wheeling. Company will organize June 15 at 502 National Bank of West Virginia Bldg.

### STREET RAILWAYS

Ark., Fort Smith.—Fort Smith Light & Traction Co. is surveying for extension of Van Buren line to the smelter of the Arkansas Zinc Co., and perhaps to Alma. R. L. Orton is Ch. Engr.

Fla., St. Petersburg.—Snell & Hamlett of St. Petersburg will build a bridge across Coffee Pot bayou and extend their trolley line about 1¼ mi., doing the work under the superintendence of their foreman.

## FINANCIAL NEWS

### FINANCIAL CORPORATIONS

Fla., Buena Vista.—Buena Vista Savings & Loan Co. has filed articles of incorporation; capital \$100,000. H. B. Hill, Pres.; H. J. Freeman, V-P.; Chas. Montgomery, Secy. and Cash; M. Garnett, Treas.

Fla., Bradentown.—R. H. Johnson Insurance Agency has filed articles of incorporation; capital \$12,000; organizers, W. W. Carnes, R. H. Johnson and M. C. Carnes.

Fla., Inverness.—Citrus County Bank, capital \$15,000, is organized with J. M. Harvey, Pres.; H. A. Reeves, 1st V-P.; G. I. Singleton, Cash.

Fla., Miami.—Fidelity Bank & Trust Co. has filed articles of incorporation; capital \$150,000; L. T. Higleyman, Pres.; F. M. Jeffords, Secy. and Treas., and E. Z. Duncan, Cash.

Ga., Atlanta.—Atlanta Securities Co., capital \$10,000, has made application for charter; incorporators, H. H. Cabaniss, H. E. Cabaniss and J. H. Wright, all of Atlanta.

Ga., Augusta.—Security Loan Co. has filed articles of incorporation; capital \$10,000; petitioners, James B. League, M. H. H. Duval, John Sylvester, Stephen Wiseman, C. A. Fleming and others.

Ga., Metcalf.—Commercial Bank of Metcalf has made application for charter; capital \$25,000; incorporators, J. W. Horne, J. T. Holland, Elmer Horne, W. W. Feekel, H. C. Copeland, G. F. Hicks and E. F. Horne.

Ky., Ashland.—Ashland Day and Night Bank has filed articles of incorporation;

capital \$15,000; incorporators, Oliver M. Elam, J. F. Stewart, Jessie A. Elam, P. P. Chatfield and John W. Woods.

N. C., Fayetteville.—A new bank capitalized at \$50,000 is being organized to take over the business of the Fourth National Bank of Fayetteville. E. R. MacKethan is one of the promoters.

N. C., Raleigh.—New River Investment Co. is chartered; capital \$25,000; incorporators, John Howe, R. W. Collett and H. H. Brimley.

Tex., Beaumont.—Tyrrell-Wilson Investment Co. is chartered; capital \$100,000; incorporators, W. C. Tyrrell, J. C. Wilson and E. E. Townes.

Tex., Corpus Christi.—Gulf Coast Building and Loan Assn., capital \$500,000, has begun business. Directors: H. G. Sherman, Pres.; A. C. McCaughan, V-P.; W. R. Norton, Secy.-Treas.; E. B. Ward, Counsel, and Paul E. Usher, Gen. Agt.

Tex., Dallas.—Guaranty Securities Co. is chartered; capital \$50,000. Incprts.: D. E. Waggoner, R. B. Stichter and Gilbert H. Irish.

Tex., El Paso.—City Mortgage Co. is chartered; capital \$300,000; incorporators, U. S. Stewart, J. P. Williams, Herman Andrews, C. H. Teague and William H. Burges.

Va., Leesburg.—Citizens' Investment Co. has filed articles of incorporation; capital \$25,000; G. G. Ware, Pres.; J. F. Stunkel, V-P., and W. S. Anderson, Secy. and Treas.

Va., Newport News.—Peninsula Savings and Loan Assn. Incprtd.; capital \$10,000 to \$200,000; J. E. Wilkins, Pres.; W. T. Pointer, Secy.

Va., Norfolk.—Prudential Building & Loan Co., Inc., is chartered; capital \$500 to \$15,000; John L. Singleton, Pres.; D. T. Singleton, Secy. and Treas.

Va., Petersburg.—Banking Trust & Mortgage Co. of Petersburg, Va., and Hopewell, Va., capital \$500,000, is organized with G. Cleveland Wright, Pres.; John W. Long, 1st V-P.; E. C. Kent, 2d V-P.; W. H. Barrow, 3d V-P.; H. L. Eley, Secy. and Treas., and R. Holling Wilcox, general counsel.

W. Va., Mullens.—Wyoming Insurance Co. has filed articles of incorporation; capital \$10,000; incorporators, E. C. Minter, J. S. Clifton of Bescoe, D. Forest Early, A. V. Daubenspeck, S. R. Westfall and Hiram Sizemore of Mullens.

### NEW SECURITIES

Ala., Crawfordville.—\$15,000 6 per cent. 20-year Wakulla county road bonds have been purchased by W. E. Lewis, Tallahassee.

Ala., Evergreen.—Bids will be received until 2 P. M. June 5, for \$15,000 five per cent. 30-year \$1000 denomination Conecuh County road improvement bonds. F. J. Dean is Judge of Probate.

Ala., Florence.—\$50,000 5 per cent. \$1000 denomination school bonds voted May 15 and maturing 1946 will be sold at private sale. M. M. Striplin is Pres. Board of Commrs.

Ark., Newport.—Bonds of Maple Slough Drainage Dist., Jackson county, have been purchased by James Gould of Pine Bluff.

Ark., Star City.—\$21,000 20-year bonds Road Improvement Dist. No. 2, Lincoln county, have been purchased by Otis & Co., Cleveland.

Ark., Stuttgart.—\$25,000 6 per cent. \$500 denomination bonds Street Improvement Dist. No. 4 have been purchased by E. J. Hahn of Little Rock.

Fla., Bradentown.—Park bonds are reported voted. Address The Mayor.

Fla., Bradentown.—Dispatch to Manufacturers Record says that \$250,000 6 per cent. 20-year \$1000 denomination Sarasota-Venice Special Road and Bridge Dist., Manatee county, bonds have been purchased by Cummings, Prudden & Co., Toledo, O., at \$104.25. Robt. H. Roesch is Clerk.

Fla., Miami.—\$25,000 jail, \$40,000 highway and \$35,000 bridge 5 per cent. Dade county bonds are to be voted on June 13. Address Board of Commrs., Z. T. Merritt, Clerk. (Previously noted.)

Fla., Miami.—\$67,000 bridge and sidewalk bonds have been purchased at \$1246 premium and accrued interest, by Stacy & Braun, Toledo, O.; \$45,000 of bonds for street improvements are to be offered about Aug. 1. W. B. Moore is City Clerk.

Fla., Monticello.—C. W. Henry, Chrmn. Board Jefferson County, writes the Manufacturers Record that there is no probability of county bonding soon.

### Merchants-Mechanics National Bank

South and Water Sts., BALTIMORE, MD.  
DOUGLAS H. THOMAS, President.  
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.  
JOHN B. H. DUNN, Cashier.  
Capital \$2,000,000. Deposits \$21,670,000.  
Surplus and Profits \$2,175,000.  
Accounts of Banks, Bankers, Corporations and Individuals solicited.  
We invite correspondence.

### The National Exchange Bank OF BALTIMORE, MD.

Hopkins Place, German and Liberty Sts.  
Capital, \$1,500,000.  
March 30, 1915, Surplus and Profits, \$350,000.00.  
OFFICERS:  
WALDO NEWCOMER, President.  
SUMMERFIELD BALDWIN, Vice-Pres.  
R. VINTON LANSDALE, Cashier.  
C. G. MORGAN, Asst. Cashier.  
Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

### We Buy Bonds

City, County, School and Road, from Municipalities and Contractors.  
WRITE  
THE PROVIDENT SAVINGS BANK & TRUST CO.  
CINCINNATI OHIO

### Municipal Bonds BOUGHT

from Contractors and Municipalities  
STACY & BRAUN  
Second National Bank Bldg., TOLEDO, O.

### First National Bank

RICHMOND, VIRGINIA  
Capital and Surplus - - - - \$3,000,000  
JNO. B. PURCELL, President.  
JNO. M. MILLER, JR., Vice-Pres.  
W. M. ADDISON, Cashier.

### WE BUY BONDS CITY, COUNTY, SCHOOL DISTRICT

CORRESPONDENCE INVITED FROM CONTRACTORS AND OFFICIALS  
SIDNEY SPITZER & CO., Spitzer Building, TOLEDO, OHIO  
NEW YORK CHICAGO CINCINNATI

### CONTRACTORS AND MANUFACTURERS



We Make Them Promptly.  
Headquarters for SEALS, STOCK CERTIFICATES, SYNCILIA, STEEL DIES, BRASS SIGNS, ENAMEL PLATES, MEMORIAL PLATES, CHURCH SEALS and FEW PLATES, Made on our Premises. Send for Catalogue.

THE J. F. W. DORMAN COMPANY  
BALTIMORE, MD.

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Fla., Orlando.—Bids will be received until 10 A. M. July 3 for \$30,000 6 per cent. bonds Special Tax School Dist. No. 4, known as Winter Park Special School Dist. bonds; dated June 1, 1915; maturity, \$1000 June 1, 1921, and each succeeding year until all have been paid; denomination \$500. Address Orange County Board Public Instruction, J. F. McKinnon, Supt.

Fla., Sarasota.—\$26,000 6 per cent. 1-10-year improvement bonds are reported sold. Harry L. Higel is Mayor.

Fla., Titusville.—Election to vote on \$40,000 6 per cent. \$500 denomination bonds postponed from June 5 to June 12. S. A. Osteen is Chrmn. Board County Commrs.

Fla., West Palm Beach.—Election is to be held June 17 to vote on \$20,000 bonds School Dist. No. 6, Palm Beach county. Address Secy. Board of Public Instruction, West Palm Beach.

Ga., Augusta.—\$45,000 4½ per cent. 30-year refunding bonds have been purchased at \$46,810.35 by John W. Dickey of Augusta.

Ga., Augusta.—Board of Education proposes to apply to the Legislature for authority to hold a bond election some time this coming fall. Until act is passed no definite information can be given. Lawton B. Evans is Supt. of Schools.

Ga., Dublin.—Election will be held July 24 to vote on \$30,000 5 per cent. 30-year bonds for constructing and equipping filtering plant. W. W. Robinson is Mayor.

Ga., Habersham.—Bids will soon be asked for \$5200 6 per cent. 30-year electric-light bonds voted May 24; denominations \$500 and \$1000. E. J. Smith is Mayor. Address J. W. Martin or D. C. Malary.

Ga., Leslie.—\$10,000 5 per cent. Leslie School Dist., Sumter county, school bonds defeated.

Ga., Reynolds.—Election is to be held June 16 to vote on \$20,000 5 per cent. \$500 denomination school-building bonds. W. F. Weaver is Chrmn. Board of Trustees.

Ky., Bedford.—\$30,000 Trimble county road bonds are voted. Address County Commrs.

Ky., Catlettsburg.—Bids were received until 1 P. M. June 1 by Board Commrs. Boyd County for \$100,000 4½ per cent. road and bridge bonds.

Ky., Hartford.—\$300,000 Ohio county road bonds defeated.

Ky., Hickman.—\$10,000 school bonds are voted. Address Bd. of Education.

Ky., Hopkinsville.—\$400,000 Christian county road bonds have been purchased at \$4120.50 premium and accrued interest by J. C. Mayer & Co. and Rudolph Kieybolte Co., Cincinnati.

Ky., Lexington.—\$5000 4 per cent. 40-year park bonds have been purchased at par and accrued interest by the Advalem Sinking Fund of Lexington.

Ky., Morganfield.—All bids received May 23 for \$450,000 4½ per cent. \$1000 denomination bonds.

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tion Union county road and bridge bonds were rejected and new bids will be asked; date not stated. John Bingham is County Clerk and J. L. Lewis County Atty.

Ky., Paducah.—Steps are being taken to call an election to vote on \$400,000 MeCracken County road bonds. Address County Commrs.

Ky., Somerset.—Bids will be received until 2 P. M. June 9, for \$25,000 4½ per cent. 30-year Pulaski County road bonds. R. F. Jasper is County Judge. Further particulars will be found in the advertising columns.

La., Alexandria.—Bids will be opened about July 1 for \$30,000 5 per cent. \$500 denomination bonds Road Dist. No. 10, Rapides parish; dated Aug. 1, 1916; maturity Feb. 1, 1917 to 1936, inclusive. Address Secy. Police Jury.

La., Baton Rouge.—Bill is before the Legislature authorizing an issue of \$9,000,000 of bonds for refunding city's indebtedness. Address The Mayor.

La., Baton Rouge.—Bids will be received until 10 A. M. June 6 by M. F. Armbrust, Pres. Board of Directors of Parish School East Baton Rouge Parish School Dist. No. 9, for \$125,000 5 per cent. \$1000 denomination site-purchase, building and equipment bonds.

La., Coushatta.—Report that Red Oak Special Road Dist., Lawrence Parish, had voted road bonds is erroneous, but \$30,000 5 per cent. 18-year \$250 and \$500 denomination road bonds for Dist. No. 3, Lawrence Parish, were voted May 16. Dated May 17, 1916. Address Police Jury.

La., Vinton.—\$30,000 school district bonds are voted. Address Board of Education.

La., Shreveport.—Election is to be held in November to vote on \$500,000 of bonds for purpose of retiring outstanding indebtedness. S. A. Dickson is Mayor and R. H. Ward Finance Commr.

Md., Cumberland.—\$75,000 five per cent. \$100 \$500 and \$1000 denomination Allegany county school bonds are to be issued. Address County Commrs.

Md., Midland.—\$5000 street-improvement bonds recently voted are 5 per cent.; denominations \$50, \$100 and \$500. Address The Mayor.

Miss., Brooksville.—Bids will be received until 6 P. M. June 6 by E. M. Chilcoat, Town Clerk, for \$10,000 6 per cent. 20-year school bonds.

Miss., Clarksburg.—\$4500 school bonds are reported voted. Address Board of Education.

Miss., Cleveland.—Bids will be received until 7 P. M. June 6 for \$14,000 street, \$12,000 school, \$2000 water-works and \$1000 bridge 6 per cent. bonds, dated June 6, 1916, and maturing April 15, 1936. L. M. Gaynes is Town Clerk.

Miss., Greenville.—\$50,000 Greenville School Dist. bonds are voted. P. T. Hayne is Chrmn. Board of Trustees.

Miss., Greenwood.—\$10,000 hospital bonds are voted. Address The Mayor.

Miss., Laurel.—\$15,000 municipal fair and \$10,000 street-improvement 5 per cent. bonds have been purchased at \$75 premium by Kaufman-Smyth-Emert Investment Co., St. Louis.

Miss., McComb City.—Bids will be received until 8 P. M. June 20 for \$90,000 5 per cent. 20-year sewer bonds, dated May 16, 1916. Bids are asked on entire issue and also on one-half of the issue, which is \$45,000. Address The Mayor. L. H. Marsalis is Clerk. Further particulars will be found in the advertising columns.

Miss., Meridian.—Bids will be received until July 3 for \$12,500, \$5000 and \$4000 4 and 5 per cent. Lauderdale county consolidated school district bonds. W. R. Pistole is Chk. Board of Suprvs.

Miss., Rosedale.—\$150,000 5 per cent. 10-20-year Bolivar county road and bridge bonds are to be sold June 5. Address County Commissioners.

Miss., Tehula.—Election is to be held June 16 to vote on \$4000 light, \$4000 water-works and \$5000 sewer and sidewalk 20-year bonds; interest not to exceed 6 per cent. John Ohleyer is Town Clerk.

Miss., Winona.—Montgomery county proposes to issue \$58,000 school bonds. Address Board of Education.

Mo., Ironton.—Bids will be received until 1 P. M. June 10 for \$15,000 5 per cent. \$1000 denomination bonds Ironton School Dist. No. 26; dated June 1, 1916; maturity one each year. G. W. Farrar is Secy. School Board.

Mo., Lebanon.—\$6000 Lebanon School Dist. high-school bonds are voted. Address Board of Education.

Mo., Liberty.—Bids will be received until 8 P. M. June 2 by B. F. Corbin, Recorder.



for \$20,000 5 per cent. 5-20-year sewer bonds, dated July 1, 1916; denomination \$500.

Mo., Slater.—\$35,000 5 per cent. 20-year water-works and electric-light bonds have been purchased at \$504 premium by Prescott & Skinner, Kansas City, Mo. C. H. Tucker is Mayor.

Miss., Pittsboro.—\$30,000 6 per cent. 40-year Calhoun county refunding bonds will probably be issued; denomination \$500. A. J. Sims is Clerk.

N. C., Asheville.—\$17,000 Woodfin School Dist., Buncombe county, 5 per cent. 20-year school bonds, dated Apr. 1, 1916, have been purchased by A. J. Hood & Co., Detroit, Mich.

N. C., Bailey.—Election is to be held June 6 to vote on \$20,000 school bonds. Address Board of Education.

N. C., Fremont.—\$60,000 water, sewer and light bonds defeated. T. B. Aycock is Mayor.

N. C., Halifax.—\$20,000 6 per cent. Halifax county road bonds have been purchased by A. J. Hood & Co., Detroit, Mich.

N. C., High Point.—No election was held May 23 to vote on street-improvement bonds. W. P. Pickett is Mayor.

N. C., Lumberton.—\$30,000 5½ per cent. \$500 denomination bonds have been purchased at \$31,075 by Mutual Loan & Trust Co., Lumberton; dated May 1, 1916; maturity 1927 to 1936 inclusive. Ira B. Townsend is Clerk and Treas.

N. C., Weldon.—\$35,000 6 per cent. street-improvement bonds have been purchased by A. J. Hood & Co., Detroit, Mich.

Okla., Calvin.—Petitions have been circulated asking Commrs. Hughes County to call an election to vote on \$34,000 Calvin township road-improvement bonds. Address County Commrs.

Okla., Kendall.—\$30,000 6 per cent. 25-year water-works and sewer bonds defeated.

Okla., Newkirk.—\$250,000 6 per cent. gas-pipe line bonds are voted. C. S. Miller is Mayor.

Okla., Oklahoma City.—\$1,715,000 5 per cent. water-works, sewer and building bonds were voted May 20; maturity not to exceed 25 years. Mike Donnelly is Commr. of Accounting and Finance. (Previously noted.)

Okla., Poteau.—\$108,530 LeFlore county road-improvement bonds have been voted as follows: Bokoche township, \$30,000; Pecola township, \$10,000; Braden township, \$33,000; Spiro township, \$28,000; Cowlington township, \$7500. A. B. Green is County Commr.

Okla., Sallisaw.—Election is to be held in Sequoyah county June 7 to vote on \$60,000 road-improvement bonds as follows: Vian Dist., \$24,000; McKey Dist., \$25,000; Sadie Dist., \$11,000. Address County Clerk.

Okla., Stillwater.—Bids were received until 10 A. M. May 31 for \$10,000 6 per cent. 25-year sewer bonds. S. W. Burr is Commissioner-Mayor.

S. C., Anderson.—Election is to be held on June 6 to vote on \$3300 bonds Airy Springs Public School Dist. 64, Anderson county; M. T. Fleming, S. M. Wilson and J. M. Long, Board of Trustees.

S. C., Blenheim.—No sale was made May 10 of the \$2000 to \$2500 20-year Blenheim School Dist. No. 15, Marlboro county, bonds, and new bids are now being received. Address C. C. Channess.

S. C., Camden.—Steps are being taken to call an election to vote on \$25,000 bonds for water and light systems and to pay off certain indebtedness. Address The Mayor.

S. C., Orangeburg.—Bids will be received

until June 26, inclusive, for \$4000 6 per cent. bonds Middle Elizabeth School Dist. No. 64, Orangeburg county. A. Z. Stroman is Chrmn. Board of Trustees of said school district.

S. C., Spartanburg.—Bids are being received for \$10,000 20-year bonds Co-operative School Dist. 97, Spartanburg county. Address Board of Trustees.

S. C., St. George.—\$2500 6 per cent. 20-year \$500 denomination school-building bonds Grover School Dist. No. 28, Dorchester County, have been purchased at \$2515 by C. G. Sayre, Anderson, S. C.

Tenn., Covington.—Bids will be received until 2 P. M. June 6 for \$20,000 30-year \$500 denomination school bonds. J. Winfield Darby is Mayor and I. L. Bringle, Recorder and Treasurer.

Tenn., Erwin.—Bids will be received until 2 P. M., June 17, for \$100,000 six per cent. 10-30 year Unicoi County road improvement bonds; dated July 1, 1916. R. M. Barry is Chrmn. County Court and L. S. Tilson, Chrmn. of Revenue Comm. Further particulars will be found in the advertising columns.

Tenn., Knoxville.—\$50,000 5 per cent. 30-year city park and playground bonds have been purchased at par, accrued interest and \$4000 premium, and \$28,000 6 per cent. 5-year street-improvement bonds at \$1247 premium by Farnson, Son & Co., Chicago; \$28,000 5 per cent. 5-year street-improvement bonds at \$407.50 by W. W. Willis & Co., Knoxville; \$26,000 5 per cent. street bonds at \$307.50 premium by Paul Petty, Spartanburg, S. C.

Tenn., Lawrenceburg.—\$350,000 Lawrence county road bonds have been purchased at \$12,000 premium by the Mercantile Trust Co. of Jackson, Tenn.

Tenn., Maryville.—Bids will be opened June 15 for \$300,000 of an issue of \$300,000 5 per cent. 10-40-year \$1000 denomination Blount county pike bonds; dated, \$100,000 July 1, 1916, and \$100,000 Jan. 1, 1917. Geo. D. Roberts is Chrmn. Finance Committee of Blount County, and W. H. Willard, Secy. Further particulars will be found in the advertising columns.

Tenn., Memphis.—\$1,500,000 of light bonds voted in 1915 have been declared valid. Address The Mayor.

Tenn., Wartburg.—\$270,000 Morgan county road bonds defeated.

Tex., Alice.—\$11,764.70 6 per cent. 5-30-year warrants have been purchased by J. L. Arltt, Austin, Tex. J. T. Wright is City Clerk.

Tex., Arlington.—Bids will be opened June 1 for \$10,000 5 per cent. \$1000 denomination sewer bonds; dated Jan. 1, 1916; maturity Jan. 1, 1936. F. R. Wallace is City Clerk.

Tex., Athens.—Bids will be opened June 12 for \$60,000 5 per cent. 40-year \$500 denomination bonds Road Dist. No. 4, Henderson county; dated July 1, 1916; maturity July 1, 1936. Address C. D. Owen.

Tex., Austin.—The Attorney-General has approved the following securities: \$125,000 funding, \$250,000 street-improvement, \$300,000 beach-filling, \$200,000 water-mains 5 per cent. Galveston bonds; \$6000 5 per cent. 5-40-year bonds Harris County Common School Dist. No. 11; \$600 5 per cent. 10-20-year bonds Camp County Common School Dist. No. 10; \$250,000 5½ per cent. 40-year bonds Hidalgo County Road Dist. No. 1; \$20,000 5 per cent. 10-40-year bonds Roysse Independent School Dist., Rockwall county.

Tex., Beaumont.—Application is to be made to the City Council by the School Board asking that an election be called to vote on \$300,000 high-school and ward-school bonds.

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Tex., Brenham.—Election to vote on \$300,000 Precinct No. 3, Washington county, road bonds is to be held June 17. Address County Commrs.

Tex., Brownwood.—\$5000 Cannon School Dist., Wood County school bonds are voted. Address County Commrs.

Tex., Caldwell.—Petition has been presented to the Commissioners' Court, Burleson county, asking that an election be held to vote on \$5000 bonds Chriesman School Dist. Address Board of Education.

Tex., Coleman.—\$4000 Voss Precinct, Coleman County, school bonds are voted. Address School Supt.

Tex., Corsicana.—\$40,000 Eureka Dist., Navarro county, road bonds defeated.

Tex., Corsicana.—\$20,000 Elmhouse Dist., Navarro county, school bonds recently voted are 5-40 year 5 per cents. R. R. Owen is County Judge.

Tex., Dallas.—Petitions are being circulated in Dallas county calling for an election to vote on \$100,000 viaduct bonds. Address County Commrs.

Tex., Denison.—\$50,000 viaduct bonds have been purchased at \$1340.50 premium by Kaufman, Smith Emert Investment Co., of St. Louis, Mo.

Tex., Eastland.—Election is to be held June 6 to vote on \$60,000 Eastland county road bonds. Address County Commrs.

Tex., Edinburg.—\$250,000 5% per cent. bonds Road Dist. No. 1, Hidalgo county, have been purchased by E. L. Twigg & Co., San Antonio, Tex.

Tex., Emhouse.—\$20,000 five per cent. 40-year \$500 denomination Common School district bonds were recently voted. Date for opening bids not yet decided. Address Emhouse School Board. (Previously noted.)

Tex., Gonzales.—The following elections will be held in Gonzales county June 15: \$2500 bonds School Dist. No. 20; \$1500 School Dist. No. 30; \$1000 School Dist. No. 38. Address County Commrs.

Tex., Greenville.—\$100,000 5 per cent. 20-year \$1000 denomination sewer bonds have been purchased at par, accrued interest and \$2185 premium by Wm. R. Compton Investment Co., St. Louis, Mo.

Tex., Hempstead.—Election is to be held June 22 to vote on \$25,000 bonds Road Dist. No. 1, Waller county. Address County Commrs.

Tex., Hillsboro.—\$140,000 Hubbard Road Dist., Hill county, road bonds defeated.

Tex., Liberty.—\$60,000 one 30-year Precinct No. 3, Liberty County road warrants are to be issued. Address County Commrs.

Tex., Lipscomb.—\$75,000 Lipscomb county road-improvement bonds are voted. Address County Commrs.

Tex., Malone.—Election is to be held June 10 to vote on \$9000 school building bonds. Address Bd. of Education.

Tex., Mineral Wells.—\$23,000 sewer bonds are voted. Address The Mayor.

Tex., McKinney.—\$25,000 5 per cent. 20-year \$1000 denomination school bonds are being offered; dated July 1, 1916; maturity July 1, 1936. Address Sims Cameron, City Secy.

Tex., Pittsburg.—\$100,000 5 per cent. 10-40-year Road Dist. No. 1, Camp county road bonds have been purchased at par and accrued interest by Stacy & Braun, Toledo, O.

Tex., Vernon.—Election called for May 20 to vote on \$15,000 hospital bonds is postponed until June 24. E. M. Rogers is County Clerk.

Tex., Yorktown.—Election is to be held June 27 to vote on \$10,000 school bonds. Address Board of Education.

Va., Gate City.—Estillville Dist., Scott county, has voted and sold \$70,000 road bonds. Election is to be held in Taylor Dist. June 29 to vote on \$80,000 road bonds. Address County Commrs.

Va., Leesburg.—\$30,000 5 per cent. 30-year \$500 or \$1000 denomination school district bonds are voted. Date for opening bids not yet decided. Address Wm. Edmondson, Purcellville, Va. C. T. Harrison is Mayor.

Va., Luray.—\$10,000 Stanley School Dist., Page county, bonds are voted. Address Board of Trustees.

Va., Manassas.—Election is to be held June 5 to vote on \$20,000 town bonds. Address The Mayor.

Va., Princess Anne.—\$130,000 Kempsville Dist., Princess Anne County, road bonds are voted. Address County Commrs.

W. Va., Clarksburg.—Election is to be held June 20 to vote on \$200,000 5 per cent. \$1000 denomination road bonds Simpson Dist., Harrison county, dated Sept. 1, 1916, and maturing Sept. 1, 1917 to 1941, inclusive. J.

James Crews is Clerk Harrison County Court.

W. Va., Elkins.—Election is to be held July 1 to vote on \$100,000 road bonds Middle Fork Dist., Randolph county. The election ordered for May 29 was called off. Thaddeus Pritt is Clerk.

W. Va., Fairmont.—Election called for May 23 to vote on \$195,000 Grant Dist., Marion county, road bonds postponed indefinitely. Address County Commrs.

W. Va., Fayetteville.—\$175,000 5 per cent. 34-year Fall Dist. and \$10,000 5 per cent. 34-year Nuttall Dist., and \$800,000 5 per cent. 34-year Fayetteville Magisterial Dist., Fayette county, road bonds are voted. R. J. Stegall is Clerk County Court.

W. Va., Harrisville.—Bids will be received June 7 for \$241,000 \$1000 denomination Magisterial Dist. of Clay, Ritchie county, road-improvement bonds. J. N. Sharpnack is Clerk.

W. Va., Parkersburg.—\$70,000 5 per cent. Tygart Dist., Wood county, road-improvement bonds have been purchased by the Parkersburg National Bank.

W. Va., Petersburg.—Report that Grant county had voted road bonds is denied. D. P. Hendrickson is Clerk.

Va., West Point.—\$30,000 5 per cent. 30-year water, sewer and sidewalk bonds are voted. H. Anderson is Mayor.

W. Va., Charleston.—Ordinance has been prepared providing for an election to vote on \$125,000 4% per cent. 25-34-year Charleston Independent School Dist., Kanawha County, school bonds. Val Fruth is Pres., and W. O. Daum, Secy., Bd. of Education.

W. Va., West Union.—Bids will be received until 1 P. M. June 30 for \$175,000 5 per cent. Grant Dist. road-improvement, Doddridge county, bonds; dated June 1, 1916; maturity June 1, 1917, to June 1, 1941, inclusive; denominations \$1000, \$500 and \$100. Hiram Hutson is Clerk County Court.

### FINANCIAL NOTES

Plans are being completed for the annual convention of the Virginia Bankers' Association, which will be held June 22, 23 and 24 at Old Point Comfort. Walker Scott of Farmville, Va., is Secy.

The West Virginia Bankers' Association at its annual convention in Wheeling elected officers thus: Pres., A. B. C. Bray of Roncoverte; V.-P., Henry O. Aleshire of Huntington; Secy., Joseph S. Hill of Charleston.

J. W. Butler of Clifton, Tex., Pres. of the Texas Bankers' Association, has called a meeting of representatives of all State bankers' associations to be held at St. Louis June 10 to protest against the Federal Reserve Board's proposed system of clearing checks and handling collections at par.

The Insurance Federation of Georgia has been organized in Atlanta with the following officers: Pres., W. A. Smith; Secy., John M. Harrison; Treas., Cary F. Baker, all of that city. The vice-presidents include Alfred C. Newell, Dan B. Harris and E. N. O'Brien, all of Atlanta; B. C. Ray of Arlington, John J. Cohen, Jr., of Augusta, and Morris Harris of Macon.

The Georgia Bankers' Association, which held its annual convention last week in Macon, elected officers for the year as follows: Chas. B. Lewis of Macon, Pres.; Rufus H. Brown of Augusta, 1st V.-P.; Joseph W. Heffernan of Savannah, 2d V.-P.; T. B. Turner of Haddock, 3d V.-P.; E. W. Stetson of Macon, 4th V.-P.; Haynes McFadden of Atlanta, Secy.; E. C. Smith of Griffin, Treas.; Orville A. Park of Macon, Chief Counsel.

The officers elected by the Mississippi Bankers' Association at its annual convention held last week at Laurel, Miss., are as follows: Pres., J. A. Bandi of Gulfport; V.-P., W. P. Kretschmar of Greenville; Secy., T. H. Dickson of Vicksburg; Treas., E. P. Peacock of Clarksdale. District vice-presidents were chosen thus: First, N. H. Crenshaw of Guntown; second, Ben Roland of Summer; third, F. E. Gunter of Jackson; fourth, W. W. Pigford of Lumberton.

James M. Sloan of Lonaconing, Md., was elected president of the Maryland Bankers' Association at its recent annual convention, held at Atlantic City, N. J., and Harry J. Hopkins of Annapolis was elected first vice-president. Charles Hann was re-elected secretary and Wm. H. Marriott was re-elected treasurer, both of Baltimore. Additional vice-presidents include Clifton K. Wells, Henry B. Reinhardt, Wm. H. Conkling and Channing Ruld of Baltimore, Wm. E. Brattan of Snow Hill, F. S. Carmody of Seat Pleasant, N. J. Brandt of Hagerstown, and E. E. Reindollar of Taneytown.



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## INDUSTRIAL NEWS OF INTEREST

#### Office Removal.

The Van Dorn & Dutton Company, Cleveland, O., gear manufacturer, announces the removal of its Denver (Col.) office from the Ideal Bldg. to 1633 Tremont St., C. H. Davidson remaining district sales manager.

#### Will Purchase Boilers.

Easton Machinery Co., Drake Bldg., Easton, Pa., advises that it is in the market for water-tube and horizontal tubular boilers. Correspondence is solicited regarding such articles, giving full description and telling where they can be inspected.

#### Seeks Southern Agents for Grate Bars.

Reliable agents are desired by the Budd Grate & Foundry Co., 2013 E. Letterly St., Philadelphia, Pa., in all parts of the Southern and Southwestern States. The Budd Company manufactures grate bars, which are sold in all parts of the country, and points out that it would form a good non-competing line for those who handle boiler-room equipment.

#### Refrigerating Installations.

Of the 115 installations of refrigerating units, freezing systems and miscellaneous parts reported by the York (Pa.) Manufacturing Co. in its report of May 23 as having been made since its report of April 20, 19 are in the Southern States of Texas, Georgia, Tennessee, Missouri, Kentucky and Maryland.

#### Contract for Power Plant.

The J. G. White Engineering Corporation, New York, has been awarded contract by The Connecticut Company, New Haven, for the engineering and construction of a new steam power plant at New Haven. The plans are being prepared for an ultimate capacity of 100,000 kilowatts. Construction work on the foundation has begun. This plant will take the place of the company's old direct-current station at New Haven, and probably two substations will be built in New Haven.

#### Safety in Oxygen-Hydrogen Apparatus.

The International Oxygen Co., 115 Broadway, New York, calls attention to the fact

that, although, according to its figures, the total generating capacity of the I. O. C. oxygen-hydrogen apparatus installed to date is many times the aggregate of all other electrolytic apparatus for the same purpose, there is not one instance of an explosion of gases due to defects in I. O. C. equipment. The company credits this record to the fact that in the design and construction every known precaution is taken to secure the utmost purity of gases, to prevent gas leakage, and to eliminate possibility of the intermingling of the oxygen and hydrogen in an explosive mixture.

#### Contracts for Coaling Equipment.

Three large reinforced-concrete coaling stations, to be built immediately at DeCoursey, Hazard and Ravenna, Ky., have been contracted for by the Roberts & Schaeffer Company, engineers and contractors, McCormick Bldg., Chicago, for the Louisville & Nashville Railway Co. Other work secured by the contractor includes a \$55,000 addition to the coal-washing plant of the Cottonwood Coal Co., Lehigh, Mont.; a Marcus patent picking table screen tippie equipment for the Oilphant-Johnson Coal Co., Bruceville, Ind.; a horizontal screen and tippie equipment to be installed immediately for the Rose-Deer Coal Mining Co. at Wayne, Alberta, Canada.

#### Opening for Cold-storage Plant.

C. W. Sumter, assistant freight agent Norfolk & Western Railway Co., Christianburg, Va., writes the Manufacturers Record that there is a fine opportunity there for a cold-storage plant. In the course of his letter he says that there is a running ice factory doing paying business, well located and having necessary equipment for conversion into a storage plant, with which end in view he wishes to hear from some practical party with some capital who would be interested; that no promoter or supply concern will be considered, but he will give right party all possible information and assistance. Mr. Sumter states that his only interest in the project is the development of the territory, which is a good fruit and produce section just a few miles from the Pocahontas coal fields.

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#### THE MACHINERY

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